GENERAL STRUCTURAL NOTES

A. CODES AND SPECIFICATIONS

1. OHIO BUILDING CODE, 2011.
2. NFPA 101.
3. ASCE 7-05, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
4. DEPARTMENT OF VETERAN AFFAIRS SEISMIC DESIGN REQUIREMENTS (H-18-8, FEBRUARY 2011).
5. ACI 301-05 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
6. ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
7. AISC 303-05 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
8. ANSI/AWS D1.1 STRUCTURAL WELDING CODE - STEEL

B. FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED UPON THE RECOMMENDATIONS INCLUDED IN THE REPORT OF GEOTECHNICAL EXPLORATION PREPARED BY BOWSER - MORNER DATED NOVEMBER 2012.
2. FOUNDATION ELEVATIONS SHOWN ARE ESTIMATED AND ARE FOR BIDDING PURPOSES ONLY, AND MAY VARY TO SUIT SUBSURFACE SOIL CONDITIONS.
3. DRILLED PIER FOUNDATIONS ARE DESIGNED TO BEAR IN UNWEATHERED GREY SHALE AND LIMESTONE WITH AN ALLOWABLE BEARING PRESSURE OF 15 KSF AND SKIN FRICTION OF 1 KSF. A MINIMUM ROCK SOCKET IS INDICATED ON PLAN. ALL PIER BEARINGS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONCRETING.
4. SPREAD FOOTINGS ARE DESIGNED FOR A MAXIMUM BEARING PRESSURE OF 3000 PSF. SOILS UNSUITABLE FOR SUPPORTING FOUNDATIONS SHALL BE REMOVED AS DIRECTED BY GEOTECHNICAL ENGINEER, AND BACKFILLED TO DESIGN BEARING ELEVATION WITH LEAN CONCRETE.
5. CONSTRUCTION JOINTS IN THE STRUCTURAL SLAB ON GRADE NOT INDICATED BY THE DETAILS MUST BE APPROVED BY THE ENGINEER OF RECORD.
6. UNLESS APPROVED OTHERWISE BY THE GEOTECHNICAL ENGINEER, ALL FOOTINGS ARE TO BE POURED NEAT (WITHOUT SIDE FORMS) WHERE SOILS PERMIT. OTHERWISE, SIDES SHALL BE FORMED.
7. SET COLUMN DOWELS AND ANCHOR RODS WITH TEMPLATE PRIOR TO CONCRETING.

C. CONCRETE

1. CONCRETE STRENGTHS:
   - A. FOOTINGS, DRILLED PIERS, PILE CAPS AND GRADE BEAMS: 3000 PSI
   - B. EXTERIOR CONCRETE EXPOSED TO WEATHER: 4500 PSI AE
   - C. TYPICAL CONCRETE UNLESS NOTED OTHERWISE: 4000 PSI AE
   - D. INTERIOR CONCRETE SLABS ON METAL DECK: 4000 PSI
   - E. BACKFILL (LEAN) CONCRETE: 1500 PSI
2. PROVIDE 3/4" BEVELS AT CORNERS OF ALL EXPOSED COLUMNS, EDGES OF EXPOSED BEAMS AND SLABS, AND TOP EDGES AND CORNERS OF EXPOSED WALLS.
3. WHERE BEAMS OF VARIOUS DEPTHS FRAME INTO A COLUMN, PROVIDE A CONSTRUCTION JOINT AT THE BOTTOM OF THE LOWEST BEAM.
4. MAXIMUM LENGTH OF WALL POUR BETWEEN CONSTRUCTION JOINTS SHALL NOT EXCEED 120 FEET. MAXIMUM LENGTH OF SLAB POURS BETWEEN CONSTRUCTION JOINTS SHALL NOT EXCEED 120 FEET. MAXIMUM AREA OF SLAB POURS NOT TO EXCEED 10,000 SF.
5. JOINTS NOT INDICATED ON STRUCTURAL DRAWINGS ARE NOT PERMITTED UNLESS APPROVED BY STRUCTURAL ENGINEER.
6. PLACE NO PERMANENT LOAD, SUCH AS MASONRY WALLS, ON SUPPORTED SLABS UNTIL CONCRETE HAS REACHED SPECIFIED STRENGTH AND ALL SHORING HAS BEEN REMOVED.
7. PLACE NO OPENINGS, SLEEVES, INSERTS, ETC., IN CONCRETE WORK UNLESS CRITERIA INDICATED ON STRUCTURAL DRAWINGS IS MET, OR IS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
8. CONCRETE CONSTRUCTION TOLERANCES ARE AS SHOWN IN THE PROJECT SPECIFICATIONS.

D. REINFORCING STEEL

1. ALL REINFORCING: 60 KSI YIELD
2. REINFORCE ALL SLABS AS FOLLOWS UNLESS OTHERWISE NOTED, FURNISH MESH IN FLAT SHEETS:
   A. SLABS ON METAL DECK: 6x6 W2.1xW2.1.
3. PROVIDE CLASS B TENSION SPLICES UNLESS OTHERWISE NOTED.
4. CLEARANCES BETWEEN REINFORCING BARS AND CONCRETE SURFACES SHALL BE ACI MINIMUM UNLESS OTHERWISE NOTED.

E. STRUCTURAL STEEL

1. MATERIAL:
   - A. WIDE FLANGE SHAPES: ASTM A-992 (Fy 50 KSI).
   - B. OTHER ROLLED SHAPES & PLATES: ASTM A-36 (Fy 36 KSI).
   - C. STRUCTURAL TUBING, HSS SHAPES: ASTM A-500, GRADE B (Fy 46 KSI).
   - D. STEEL PIPES: ASTM A-53, GRADE B (Fy 35 KSI).
   - E. HEADED SHEAR STUDS: COMPLY WITH AWS D1.1
   - F. FIELD BOLTS: ASTM A-325, 3/4" MIN. DIA., U.N.O.
   - G. ANCHOR RODS: ASTM F-1554 (Fy 36 KSI), U.N.O.
2. FABRICATOR TO DESIGN CONNECTIONS NOT DETAILED:
   A. CONNECTIONS ARE TO BE DESIGNED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, THE AISC LRFD SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, THE AISC MANUAL, AND THE STRUCTURAL STEEL FRAMING PLANS, NOTES AND DETAILS OF THESE DRAWINGS.

   B. CONNECTION CONFIGURATIONS INDICATED ON THE PLANS, NOTES AND DETAILS REPRESENT THE DESIGN INTENT. ITEMS SPECIFICALLY INDICATED: WELDS, STIFFENERS, BRACES, ETC. MUST BE PROVIDED AT MINIMUM AS SHOWN. ADDITIONAL DESIGN AND DETAILING OF CONNECTIONS, INCLUDING CONSIDERATION OF MEMBER THICKNESS, HOLES, CUTS, COPES AND THE EFFECTS OF CONCENTRATED FORCES, SHALL BE PROVIDED BY THE CONTRACTOR.

   C. UNLESS SPECIFIC REACTIONS, MOMENTS, SHEARS, AND AXIAL FORCES ARE INDICATED, DESIGN BEAM CONNECTIONS FOR REACTIONS DUE TO THE MAXIMUM UNIFORM LOAD THE BEAM CAN SUPPORT AT ITS SPAN, AS SHOWN IN THE AISC MANUAL FOR SPECIFIED YIELD STRENGTH.
3. PRIME PAINTING IS REQUIRED FOR ALL STEEL WHICH WILL BE VISIBLE IN THE COMPLETED BUILDING AND IS NOT SCHEDULED TO RECEIVE FIRE PROOFING, INCLUDING AREAS OF EXPOSED STRUCTURE SHOWN ON ARCHITECTURAL DRAWINGS. FOLLOW ADDITIONAL REQUIREMENTS OF AISC SPECIFICATIONS AND THE PROJECT SPECIFICATIONS FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.
4. PROVIDE ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) WHERE EXPOSED STEEL WORK IS FIELD PAINTED IN THE COMPLETED STRUCTURE, SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. ALL EXTERIOR WALL LINTELS, LEDGE ANGLES, CANOPY FRAMING, COOLING TOWER FRAMING, MEMBERS ABOVE THE ROOF LINE AND STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED, UNLESS NOTED OTHERWISE.

F. METAL FLOOR AND ROOF DECK

1. ALL WORK SHALL CONFORM TO STEEL DECK INSTITUTE (SDI) SPECIFICATIONS FOR COMPOSITE STEEL FLOOR DECK, NON-COMPOSITE STEEL FORM DECK, AND STEEL ROOF DECK.
2. MATERIAL, G-60 MINIMUM GALVANIZED STEEL:
   - A. 3" 20 GAGE (MINIMUM) ROOF DECK.
   - B. 2" 20 GAGE (MINIMUM) COMPOSITE FLOOR DECK.
3. MINIMUM ATTACHMENT OF FLOOR DECK: FASTEN TO ALL SUPPORTS WITH NOT LESS THAN 5/8" DIA. FUSION WELDS SPACED 12" O.C. MECHANICALLY FASTEN SIDE LAPS BETWEEN DECK UNITS WITH #10 SCREWS OR BUTTON PUNCH AT 36" O.C. MAX. COMPLY WITH U.L. REQUIREMENTS.
4. MINIMUM ATTACHMENT OF ROOF DECK: FASTEN TO ALL SUPPORTS WITH 5/8" DIA. FUSION WELDS AT 6" O.C. AT ALL ENDS AND END LAPS, AT 12" O.C. AT ALL INTERMEDIATE SUPPORTS AND EDGES PARALLEL WITH DECK FLUTES. FASTEN SIDE LAPS BETWEEN DECK UNITS WITH #10 SCREWS AT 24" O.C. MAX. PROVIDE ADDITIONAL ATTACHMENT WHERE REQUIRED BY U.L. AND FACTORY MUTUAL RATING OR DIAPHRAGM FORCES.

G. COORDINATION AND CONSTRUCTION

1. FIELD VERIFY EXISTING DIMENSIONS AND ELEVATIONS WHICH AFFECT FABRICATION PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND FABRICATION.
2. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL EMBEDDED ITEMS, SLEEVES, FLOOR PITCHES, FILLS, AND DEPRESSIONS.
3. STRUCTURAL FRAMING PLANS ARE TYPICALLY DRAWN AS REFLECTED PLANS SHOWING BEAMS, WALLS, AND COLUMNS ON THE UNDERSIDE OF THE LEVEL SHOWN.
4. ALL FRAMING MEMBERS PROVIDED FOR MECHANICAL TRADES, COOLING TOWER FRAMING, ELEVATOR SUPPORT BEAMS, LINTELS, ROOF OPENINGS, ETC., ARE FOR BIDDING PURPOSES ONLY. SUBMIT MANUFACTURER'S DATA FOR THE PROPOSED EQUIPMENT TO STRUCTURAL ENGINEER PRIOR TO SUBMITTAL OF SHOP DRAWINGS FOR VERIFICATION OR REDESIGN OF SUPPORTS.
5. BRACE ENTIRE STRUCTURE AS REQUIRED TO MAINTAIN STABILITY UNTIL COMPLETE AND FUNCTIONING AS THE DESIGNED UNIT.
6. DO NOT BACKFILL FOUNDATION WALLS SPANNING BETWEEN BASEMENT SLABS AND STRUCTURAL FLOORS UNTIL SUPPORTING SLABS ARE IN PLACE.
7. BRACE WALLS WHICH ARE TIED TO SLAB ON GRADE FOR TOP LATERAL SUPPORT BEFORE BACKFILLING AND UNTIL SLAB ON GRADE HAS ATTAINED SPECIFIED STRENGTH.
8. VERIFY EXACT SIZE AND LOCATION OF ALL WALL, FLOOR, AND ROOF OPENINGS PRIOR TO SUBMISSION OF SHOP DRAWINGS. SHOW ALL OPENINGS ON SHOP DRAWINGS.
9. PLACEMENT OF CONDUITS IN CONCRETE SHALL ADHERE TO THE FOLLOWING:
   - A. OUTSIDE DIAMETER OF CONDUITS SHALL BE 1" OR LESS WHERE EMBEDDED IN SLABS AND JOISTS, AND 1/2" OR LESS WHERE EMBEDDED IN BEAMS, WALLS, OR COLUMNS.
   - B. BUNCHING OF CONDUITS IS NOT PERMITTED. CONDUITS SHALL BE SPACED 3 DIAMETERS OR GREATER ON CENITER, AND 6" MIN. AWAY FROM COMPOSITE SHEAR STUD CONNECTORS.
   - C. LONGITUDINAL PLACEMENT OF CONDUITS IN CONCRETE JOISTS AND BEAMS SHALL BE LIMITED TO ONE CONDUIT PER JOIST AND THREE CONDUITS PER BEAM, 6" MIN. FROM REINFORCING .
   - D. MINIMUM CONCRETE COVER ON CONDUITS SHALL BE 11/2".
   - E. ALUMINUM CONDUITS, PIPES, OR SLEEVES ARE NOT PERMITTED.
10. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
11. THE DUTY OF THE ENGINEER TO CONDUCT CONSTRUCTION REVIEW OF CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

H. MECHANICAL LOADS SUPPORTED FROM STRUCTURE

1. LOADS ARE TO BE DISTRIBUTED TO THE STRUCTURE IN A MANNER THAT DOES NOT EXCEED THE LOAD ALLOWANCES NOTED UNDER DESIGN LOADS. ANCHORS ARE TO HAVE AN ULTIMATE SAFETY FACTOR OF AT LEAST 4.0.
2. LOADS SUPPORTED BY WIDE FLANGE BEAMS ARE TO BE APPLIED IN A MANNER WHICH DOES NOT CAUSE TORSION ABOUT THE LONGITUDINAL AXIS OF THE BEAM.
3. THE SIZE AND LOCATION OF ROOF CURBS AND STEEL FRAMING WHICH SUPPORT EQUIPMENT LOADS MUST BE COORDINATED WITH SUPPORTING STRUCTURAL STEEL AND/OR ANGLE FRAMES. HVAC CONTRACTOR MUST PROVIDE ACCURATE DIMENSIONAL INFORMATION TO STEEL FABRICATOR PRIOR TO FABRICATION.
4. ROOF CURBS SUPPORTING LOADS MUST BEAR DIRECTLY ON SUPPORTING STEEL WITH SHIMS TO TRANSFER LOADS THROUGH THE ROOF DECK.
5. DO NOT HANG OR OTHERWISE SUPPORT ANY ITEMS FROM METAL ROOF DECK.

I. DESIGN LOADS

1. FLOOR LOAD:
   - SLAB ON GRADE LIVE LOAD: 100 PSF
   - TYPICAL 1st AND FUTURE 2nd FLOOR LIVE LOAD: 100 PSF
   - MECHANICAL ROOM LIVE LOAD: 150 PSF
   - CEILING AND MECHANICAL ALLOWANCE: 15 PSF
   - PARTITION ALLOWANCE (LL < 80PSF): 20 PSF
   - CONCENTRATED LOAD ON FLOOR: 2000 LBS
2. ROOF LOAD:
   - ROOF LIVE LOAD, MINIMUM: 20 PSF - NR
   - FUTURE ROOF ALLOWANCE DEAD LOAD: 25 PSF
   - FUTURE ROOF ALLOWANCE LIVE LOAD: 25 PSF + DRIFT
   - CEILING AND MECHANICAL ALLOWANCE: 15 PSF
   - CONCENTRATED LOAD ON ROOF: 300 LBS
   - RTU DEAD LOADS ON (FUTURE 2ND FLOOR): MECHANICAL UNITS WEIGHING 40 PSF OR LESS ON EQUIPMENT FOOTPRINT.
   - NOT REQUIRING SLAB PENETRATIONS FOR DUCKWORK MAYBE PLACED ON THE SLAB WITHOUT SUPPLEMENTAL REINFORCEMENT OF THE STRUCTURE.
   - PATIENT LIFTS: BEAMS HAVE BEEN DESIGNED TO CARRY PATIENT LIFT LOADING OF 770 LBS

NR INDICATES LIVE LOADS ARE NOT REDUCED. OTHERWISE DESIGN LIVE LOADS FOR SLABS, BEAMS, COLUMNS, AND FOUNDATIONS ARE REDUCED PER CODE. ROOF LIVE LOADS ARE INCREASED FOR SNOW DRIFT AND PONDING PER ASCE 7. WATER DEPTH ON DEFLECTED STRUCTURE 6" MAXIMUM.

3. SNOW LOAD:
   - GROUND SNOW LOAD: Pg = 25 PSF
   - FLAT ROOF SNOW LOAD: B
   - SNOW EXPOSURE FACTOR: Ce = 1.0
   - SNOW LOAD IMPORTANCE FACTOR: Is = 1.2
   - THERMAL FACTOR: Ct = 1.0
4. WIND LOAD:
   - BASIC WIND SPEED (3-SECOND GUST): 90 MPH
   - WIND LOAD IMPORTANCE FACTOR: Iw = 1.15
   - WIND EXPOSURE: C
5. EARTHQUAKE DESIGN DATA:
   - SEISMIC OCCUPANCY CATEGORY: IV
   - SEISMIC IMPORTANCE FACTOR: Ie = 1.5
   - MAPPED SPECTRAL RESPONSE ACCELERATION: Ss = 0.186
   - MAPPED SPECTRAL RESPONSE ACCELERATION: S1 = 0.069
   - SPECTRAL RESPONSE COEFFICIENT: Sds = 0.124
   - SPECTRAL RESPONSE COEFFICIENT: Sd1 = 0.046
   - SITE CLASS: B
   - SEISMIC DESIGN CATEGORY: A
   - BASIC SEISMIC FORCE RESISTING SYSTEM: STRUCTURAL STEEL NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE.
   - RESPONSE MODIFICATION FACTOR: R=3.
   - SEISMIC RESPONSE COEFFICIENT: Cs = 0.093
   - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PER ASCE 7-05 SECTION 12.8.

J. UTILITIES

1. PRIOR TO EXCAVATION AND EARTHWORK, VERIFY LOCATIONS OF UNDERGROUND UTILITIES WITH THE VA. EXCAVATE OR SURVEY TO ESTABLISH EXACT UTILITY LOCATIONS. UTILITY LOCATIONS SHOWN ON THE CONTRACT DRAWINGS ARE ONLY APPROXIMATE AND CANNOT BE USED TO ASSURE THE CONTRACTOR OF ADEQUATE CLEARANCE IN CASE OF CLOSE PROXIMITY. COORDINATE ALL WORK WITH THE UTILITIES TO ASSURE THEIR UNINTERRUPTED FUNCTION.
2. ACTIVE UTILITIES SHOWN ON THE CONTRACT DRAWINGS SHALL BE ADEQUATELY PROTECTED FROM DAMAGE. WHERE ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS, CONTRACTOR SHALL IMMEDIATELY NOTIFY VA, ENGINEER, AND UTILITY OWNER BEFORE PROCEEDING.WORK SHALL BE PROTECTED, SUPPORTED, OR RELOCATED AS DIRECTED, AND THE CONTRACT SUM ADJUSTED ACCORDINGLY.
3. INACTIVE AND ABANDONED UTILITIES ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS SHALL BE REPORTED IMMEDIATELY TO THE VA AND ENGINEER. SUCH UTILITIES SHALL THEN BE REMOVED, PLUGGED, OR CAPPED AS DIRECTED, IN THE ABSENCE OF SPECIFIC REQUIREMENTS, PLUG OR CAP SUCH UTILITIES AS REQUIRED BY THE UTILITY OWNER.

K. FIREPROOFING

1. ALL LOAD BEARING METAL STRUCTURAL FRAMING REQUIRES SPRAY-ON FIRE PROOFING OR FIRE RATED ENCLOSURE. REFER TO PROJECT SPECIFICATION AND ARCHITECTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS.

STRUCTURAL STEEL FRAMING NOTES:

1. UNDIMENSIONED MEMBERS TYPICALLY ARE EQUALLY SPACED BETWEEN DIMENSIONED MEMBERS.
2. COORDINATE SIZES AND LOCATIONS OF ALL FLOOR AND ROOF OPENINGS/SLEEVES WITH ARCHITECTURAL AND MECHANICAL REQUIREMENTS. SEE TYPICAL FLOOR AND ROOF OPENING DETAILS.
3. FABRICATOR TO COMPLETE THE DESIGN OF ALL CONNECTIONS. SEE GENERAL NOTES AND PROJECT SPECIFICATIONS.
4. ALL SHEAR CONNECTIONS TO COLUMNS ARE TO BE AISC DOUBLE ANGLE CONNECTIONS U.N.O. WITH THE MINIMUM ROWS OF BOLTS = BEAM DEPTH IN INCHES DIVIDED BY 4.5 SPACED 3" MINIMUM O.C.
5. UNLESS INDICATED OTHERWISE SHEAR CONNECTIONS AT PURLINS TO GIRDERS MAY BE AISC SINGLE SHEAR CONNECTIONS WITH A MAXIMUM ECCENTRICITY OF 3" AND MINIMUM ROWS OF BOLTS = BEAM DEPTH IN INCHES DIVIDED BY 4, SPACED 3" MINIMUM O.C. SINGLE SHEAR CONNECTIONS SHALL HAVE HORIZONTAL SHORT SLOTTED HOLES TO THE SUPPORTED BEAM, STANDARD HOLES TO THE SUPPORTING GIRDER, AND ONE SIDE MAY BE SHOP WELDED.
6. FORCES INDICATED ON THE DRAWINGS ARE FACTORED FOR LRFD DESIGN. DESIGN BEAM CONNECTION FOR FORCES INDICATED ON THE PLANS, BRACING ELEVATIONS AND DETAILS MAY ALSO SHOW REQUIRED FORCES WHICH ARE ADDITIVE. FORCES ARE INDICATED AS :

   A = AXIAL END REACTION, KIPS
   V = VERTICAL END REACTION, KIPS.
7. INDICATES MOMENT CONNECTION.
8. INDICATES BRACE, SEE DETAILS.
9. INDICATES DIRECTION OF DECK SPAN.
10. V.B. = VERTICAL BRACE IN BAY INDICATED. SEE ELEVATIONS.
11. D.B. = DECK BEARING.
12. U.N.O. = UNLESS NOTED OTHERWISE.
13. COMPOSITE SHEAR CONNECTORS TO BE 3/4" DIA. HEADED STUDS, 4" LONG U.N.O. PROVIDE ADDITIONAL STUDS SO THAT THE MAXIMUM INSTALLED SPACING DOES NOT EXCEED 24" O.C., REGARDLESS OF QUANTITY INDICATED. IF NONE ARE INDICATED, PROVIDE AT 24" O.C. ON ALL BEAMS OVER 22 FEET LONG WITH CONCRETE SLABS.
14. W18x35 (16) - A SINGLE NUMBER GIVEN WITH A BEAM SIZE INDICATES TOTAL NUMBER OF STUDS EVENLY SPACED ALONG THE BEAM OR GIRDER.
15. (16) (6) (16) INDICATES QUANTITIES OF STUDS TO BE EVENLY SPACED ALONG GIRDER BETWEEN INTERSECTING PURLINS/COLUMNS.
16. FABRICATE PURLINS AND GIRDERS WITH NATURAL CAMBER UP. NO CAMBER REQUIRED FOR ROOF BEAMS. CAMBER MEMBERS SUPPORTING FLOOR SLABS AS NOTED "C= " ON PLANS OR AS FOLLOW (U.N.O. ON PLANS):

MEMBER	SPAN (+/-)	CAMBER (+1/2", -0")
W16 PURLINS	30'	1"
W18 PURLINS	40'	11/4"
W21 INTERIOR GIRDERS	30'	7/8"

   (MEMBERS NOTED "NC" ON PLAN TO HAVE NATURAL CAMBER ONLY.)
17. SCHEDULE ERECTION SEQUENCE AND/OR PROVIDE ADDITIONAL TEMPORARY VERTICAL BRACING SO THAT ALL PORTIONS OF THE STRUCTURAL FRAME ARE BRACED FOR LATERAL LOADS, HORIZONTAL DECK DIAPHRAGMS ARE TO BE COMPLETED BETWEEN STABILIZING BRACES PRIOR TO CONCRETE PLACEMENT.
18. ROOF AND FLOOR DECK IS TO BE CONTINUOUSLY SUPPORTED AT EACH END OF DECK SPAN. PROVIDE ADDITIONAL L3x3x1/4 DECK SUPPORT ANGLES WHERE REQUIRED.
19. ALL FRAMING CONNECTIONS, GROUTING OF COLUMN BASE PLATES, AND INSPECTIONS TO BE COMPLETED PRIOR TO CASTING SLAB.
20. SLABS ARE TO BE CAST LEVEL, WITH MINIMUM THICKNESS SHOWN ON DRAWINGS. PROVIDE AN ASSUMED EXTRA 3/4" OF CONCRETE TO ACCOUNT FOR METAL DECK AND BEAM DEFLECTION. PURLINS AND GIRDERS ARE UNSHORED DURING SLAB PLACEMENT. AFTER PLACEMENT, FINISH SLABS TO REQUIRED TOLERANCES, REFER TO SPECIFICATIONS.
21. CONTRACTOR IS RESPONSIBLE TO PROVIDE A FINISHED SLAB EDGE WHICH IS STRAIGHT AND TRUE AND ACCURATELY LOCATED RELATIVE TO FINISH WALL LINES. GAGES SHOWN FOR CLOSURE ANGLES ARE THE MINIMUM REQUIRED. HEAVIER GAGE, STRAPS AND/OR A RETURN LIP AT TOP OF ANGLE MAY BE USED AT CONTRACTOR'S OPTION. WELD CLOSURE ANGLES TO DECK/BEAM AT 12" MAX. O.C. OR AS REQUIRED TO PREVENT TORSIONAL DEFLECTION OF ANGLE.
22. ALL ANGLES/MEMBERS SUPPORTING THE BUILDING FACADE, ARCHITECTURAL WALLS OF MASONRY OR GLASS, AND ITEMS NOTED "MASONRY SUPPORT" OR "CFMF SUPPORT" ARE CONSIDERED 'ADJUSTABLE ITEMS' AND ARE TO BE LOCATED WITHIN 3/8" OF THEIR DESIGN VERTICAL AND HORIZONTAL LOCATION RELATIVE TO THE ESTABLISHED FINISH WALL LINE, FINISH FLOOR LINE, AND MASONRY COURSING.

3023.00

Revisions	Date
ISSUED FOR BID - -	1/31/13 - - -

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Revised By:	

Drawing Title: **GENERAL NOTES**
Project Title: SITE PREP FOR CT SCANNER
Date: 01/31/2013
Project No.: 552 - CSI - 333
Approved: Project Manager: RANDY FIORINA
Building Number: 335
Checked: FJE
Drawn: VLB
Approved: Service Chief: GARY ABRELI
Location: 4100 WEST THIRD STREET DAYTON, OH 45428
Drawing No.: SS0.1

VAMC, DAYTON
Department of Veterans Affairs
VA

VA FORM 08-6231, OCT 1978

10/30/2013 5:08:34 PM
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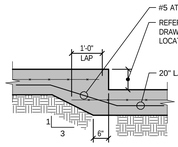
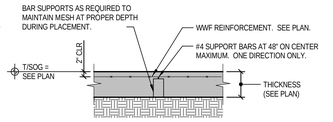
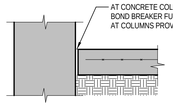


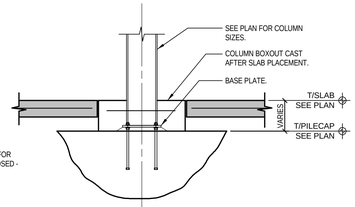
S.O.G. DEPRESSION



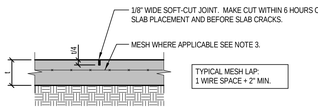
TYPICAL S.O.G.



WALL/FLOOR ISOLATION JOINT

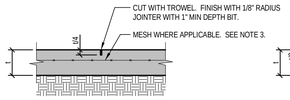


TYPICAL INTERIOR COLUMN BASE



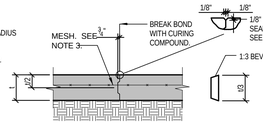
SAWED CONTROL JOINT

(INTERIOR SLABS, UNLESS NOTED OTHERWISE.)
ALTERNATIVELY USE TOOLED CONTROL JOINT.



TOOLED CONTROL JOINT

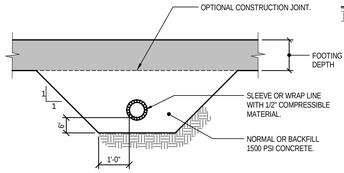
(EXTERIOR SLABS, UNLESS NOTED OTHERWISE.)



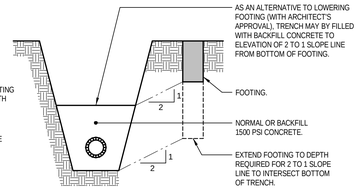
KEYED CONSTRUCTION JOINT

NOTES :
1. REFER TO ARCHITECTURAL DRAWINGS FOR JOINTS AT EXTERIOR PAVEMENTS.
2. PROVIDE CONTROL (OR CONSTRUCTION) JOINTS AT ALL COLUMN LINES. ADDITIONALLY PROVIDE CONTROL JOINTS AT MAXIMUM SPACING OF 15'-0" EACH WAY UNLESS OTHERWISE NOTED. PROVIDE CONTROL JOINTS AT ALL RE-ENTRANT CORNERS. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO ARCHITECT, CO7R, AND ENGINEER OF RECORD FOR REVIEW.
3. CUT OUT 4" LENGTH OF EVERY OTHER MESH WIRE CROSSING A JOINT.
4. ALL CONTROL JOINTS SHALL BE ALIGNED WITH TILE JOINTS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS.
5. REFER TO SPECIFICATIONS FOR SUB BASE AND VAPOR BARRIER REQUIREMENTS.

SLAB ON GRADE CONTROL/CONST. JOINTS

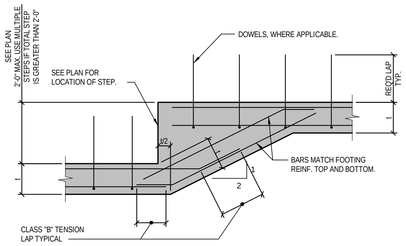


PERPENDICULAR TO FOOTING



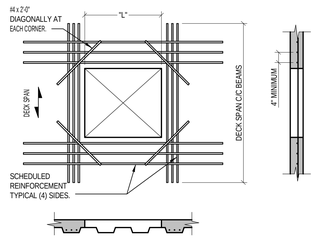
PARALLEL WITH FOOTING

MECHANICAL LINES ADJACENT TO FOOTINGS



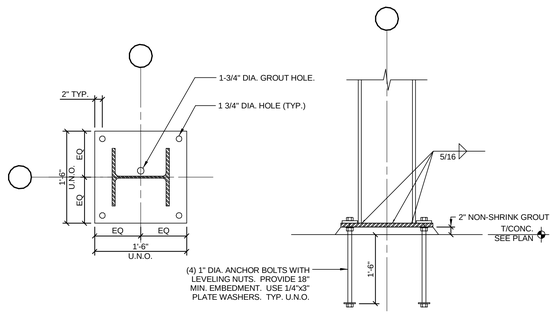
TYPICAL FOOTING STEP IN CLAY OR FILL

TYPICAL FOOTING STEPS



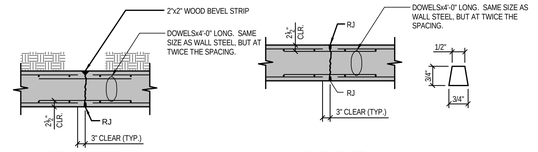
ISOLATED SLAB OPENING

NOTES:
1. BOX OUT OPENING. DO NOT CUT DECK UNTIL 7 DAYS AFTER SLAB IN CAST. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING PLACEMENT OF REINFORCEMENT AND CUTTING OF DECK BY OTHER TRADES.
2. ROUGH OPENING SIZE EQUALS DUCT SIZE PLUS 2". REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATIONS OF OPENINGS.
3. "L" = OPENING LENGTH PERPENDICULAR TO SLAB SPAN OR DIAMETER FOR SLEEVES. MAXIMUM "L" IS 2'-6". NO LENGTH RESTRICTION PARALLEL TO DECK SPAN.
4. MINIMUM CLEAR SPACING BETWEEN OPENINGS PERPENDICULAR TO DECK SPAN IS 2 x "L".
5. REINFORCEMENT:
L = 20" TO 30", USE (3) #5 EACH SIDE.
L = 12" TO 19", USE (2) #5 EACH SIDE.
L = 6" TO 11", USE (1) #5 EACH SIDE.
L = LESS THAN 6", NO REINFORCING REQUIRED.
LENGTH PARALLEL TO DECK SPAN EQUALS SPAN +4"
LENGTH PERPENDICULAR TO DECK SPAN EQUALS OPENING +4'-0".



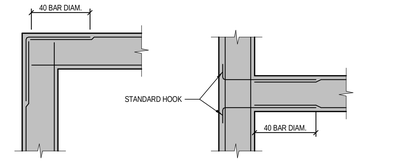
TYPICAL COLUMN BASE

NOTE: ANCHOR BOLTS ARE SHOWN ON OUTSIDE OF COLUMN FLANGES. COORDINATE WITH REINFORCING BAR/COLUMN DIMENSIONS FOR LOCATION OF ANCHOR BOLTS.



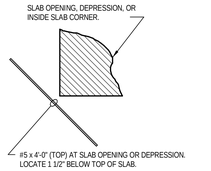
NOTES:
1. FORM TIES TO BE WITHIN 6" OF ANY JOINT.
2. REFER TO FOUNDATION PLAN FOR CONTROL JOINT LOCATIONS.
3. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WATERPROOFING REQUIREMENTS.
4. DETAIL CONTROL JOINTS ON SHOP DRAWINGS.
5. LOCATE CONSTRUCTION JOINTS AT CONTROL JOINTS.

VERTICAL WALL CONTROL AND CONSTRUCTION JOINTS



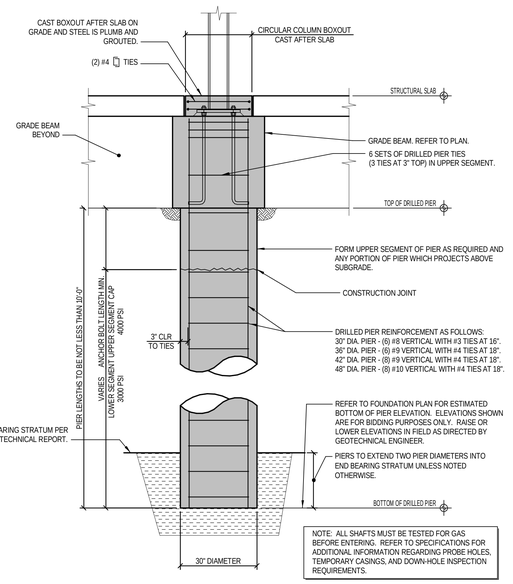
NOTES:
1. CORNER BARS MATCH HORIZ. REINFORCEMENT IN SIZE AND SPACING.
2. FOR SINGLE LAYER WALLS USE SINGLE BARS AS SHOWN.

TYP. BARS AT WALL, BEAM AND FOOTING CORNERS AND INTERSECTIONS



NOTE:
DETAIL APPLIES TO BOTH ELEVATED SLABS AND SLABS-ON-GRADE.

TYPICAL BARS AT SLAB CORNER



TYPICAL STEEL COLUMN/DRILLED PIER

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Revised By:

Drawing Title	Project Title	Date
TYPICAL DETAILS	SITE PREP FOR CT SCANNER	01/31/2013
Approved: Project Manager: RANDY FIORINA	Building Number: 335 · Checked: FJE · Drawn: VLB	Project No.: 552 - CSI - 333
Approved: Service Chief: GARY ABRELI	Location: 4100 WEST THIRD STREET DAYTON, OH 45428	Drawing No.: SS0.2

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Department of Veterans Affairs
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12/20/2013 08:05 PM
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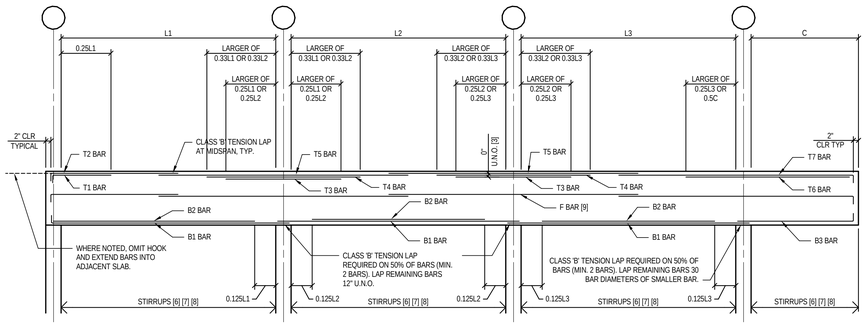
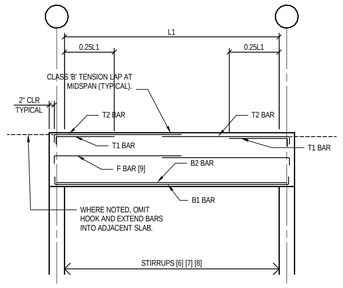


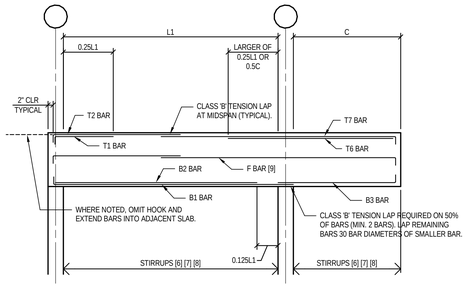
EXTERIOR SPAN
TYPE 1 BEAM

INTERIOR SPAN
TYPE 2 BEAM

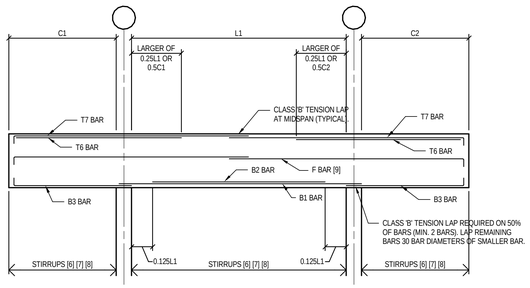
EXTERIOR SPAN WITH CANTILEVER
TYPE 3 BEAM



SINGLE SPAN
TYPE 4 BEAM



SINGLE SPAN WITH CANTILEVER
TYPE 5 BEAM



SINGLE SPAN WITH DOUBLE CANTILEVER
TYPE 6 BEAM

TYPICAL GRADE BEAM REINFORCEMENT DIAGRAMS

TYPICAL BEAM REINFORCEMENT DIAGRAM NOTES

[1] FOR THE PURPOSE OF ESTABLISHING THE LEFT AND RIGHT HAND SIDE OF A BEAM, THE BEAM IS TO BE VIEWED IN THE SAME ORIENTATION AS THE CORRESPONDING BEAM MARK ON THE FRAMING PLAN.

[2] WHERE TYPE 2, 4, OR 6 BEAM TOP BARS ARE CALLED OUT WITH THE SUBSCRIPT "L" OR "R" IN THE BEAM SCHEDULE, (E.G. T2L, T3L, T2R, OR T3R), THE SUBSCRIPT REFERS TO THE LEFT OR RIGHT SIDE OF THE BEAM RESPECTIVELY. WHERE TYPE 2, 4, OR 6 BEAM TOP BARS ARE CALLED OUT WITHOUT A SUBSCRIPT, THE BARS ARE REQUIRED ON BOTH THE LEFT AND RIGHT SIDES OF THE BEAM.

[3] BARS NOTED WITH AN ASTERISK IN THE SCHEDULE (E.G. "2#7*) SHALL BE PLACED IN A SECOND LAYER. THE BARS IN THE SECOND LAYER ARE TO BE PLACED DIRECTLY ABOVE OR BELOW THE BARS IN THE OUTER LAYER WITH THE DISTANCE BETWEEN LAYERS MAINTAINED AT 1" CLEAR.

[4] PROVIDE 1½" CONCRETE COVER TO TIES AND STIRRUPS ON ALL BEAM SURFACES, UNLESS NOTED OTHERWISE.

[5] HOOK TOP AND BOTTOM BARS WHERE SHOWN OR NOTED. PROVIDE STANDARD 90° HOOK OR 180° HOOK WHERE REQUIRED FOR CLEARANCE.

[6] PROVIDE MINIMUM #4 STIRRUPS AT 36" O.C. IN ALL BEAMS WHERE NO STIRRUPS ARE SCHEDULED AND WHERE NOTED "NOMINAL" ON BEAM DIAGRAMS. WHERE STIRRUPS ARE SCHEDULED, PROVIDE STIRRUPS OF SAME SIZE AS THE SCHEDULED STIRRUPS SPACED AT MAXIMUM 36" O.C. BETWEEN THE SCHEDULED STIRRUPS.

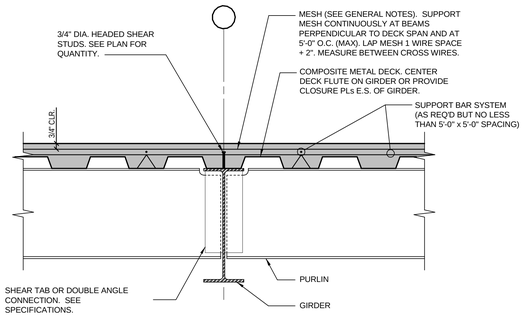
[7] PLACE FIRST STIRRUP AT ½ OF THE SCHEDULED SPACING FROM THE FACE OF SUPPORT.

[8] STIRRUPS ARE NOTED AS BEGINNING AT THE SUPPORT EACH END AND PROCEEDING TOWARD THE MIDSPAN.

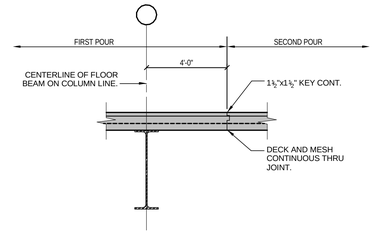
[9] PLACE ½ OF SCHEDULED FACE BARS (TYPE "F") ON EACH FACE OF BEAM AND SPACE EQUALLY BETWEEN TOP AND BOTTOM BARS. BARS ARE CONTINUOUS WITH CLASS "B" TENSION LAPS LOCATED AT APPROXIMATE MIDSPAN OF BEAM. AT DISCONTINUOUS ENDS, HOOK FACE BARS AT FAR END OF THE SUPPORT OR EMBED 40 BAR DIAMETERS BEYOND THE FACE OF THE SUPPORT UNLESS OTHERWISE NOTED.

[10] FABRICATE BEAM REINFORCEMENT FOR NOMINAL CONCRETE BEAM SIZES NOTED, ALTHOUGH ACTUAL CONCRETE SECTIONS MAY BE WIDER AND/OR DEEPER. UNLESS NOTED OTHERWISE, PLACE BEAM REINFORCEMENT TO MAINTAIN MINIMUM CONCRETE COVER WITHIN NOMINAL BEAM SIZE. SEE "TYPICAL BEAM BAR PLACEMENT" DETAILS FOR REQUIRED ADDITIONAL REINFORCING AT BEAMS WITH ADDITIONAL WIDTH.

STIRRUP TYPES	
ST-1	
ST-2	
ST-3	
ST-4	
ST-5	

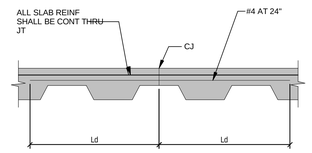


TYPICAL SUPPORTED SLAB



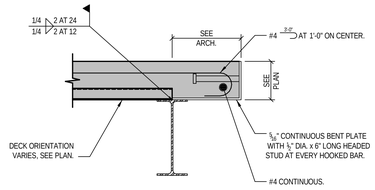
NOTES:
1. LOCATION OF CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION, SUBJECT TO ARCHITECT'S APPROVAL.

SLAB ON METAL DECK CONSTRUCTION JOINT (PERPENDICULAR)

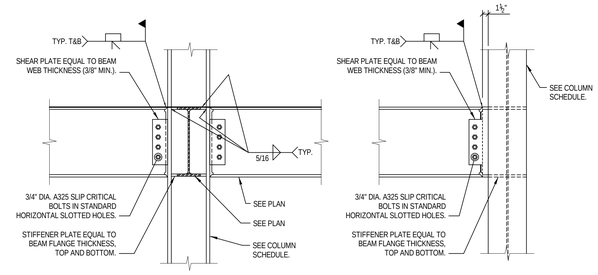


NOTES:
1. SUBMIT LOCATIONS OF ALL CONSTRUCTION JOINTS TO ENGINEER FOR REVIEW AND ACCEPTANCE BEFORE FORMING.

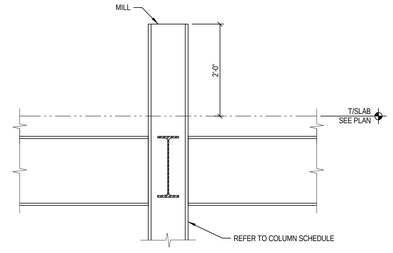
SLAB CONSTRUCTION JOINT (PARALLEL)



TYPICAL SLAB EDGE DETAIL



TYPICAL BEAM TO COLUMN MOMENT CONNECTION



TYPICAL COLUMN EXTENSION

3023.00

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Revised By:

Drawing Title: **TYPICAL DETAILS**
Project Title: SITE PREP FOR CT SCANNER
Date: 01/31/2013
Project No.: 552 - CSI - 333
Approved: Project Manager: RANDY FIORINA
Building Number: 335
Checked: FJE
Drawn: VLB
Drawing No.: SS0.3
Approved: Service Chief: GARY ABRELI
Location: 4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON
Department of Veterans Affairs
VA

VA FORM 08-6231, OCT 1978

1/29/2013 5:08:08 PM
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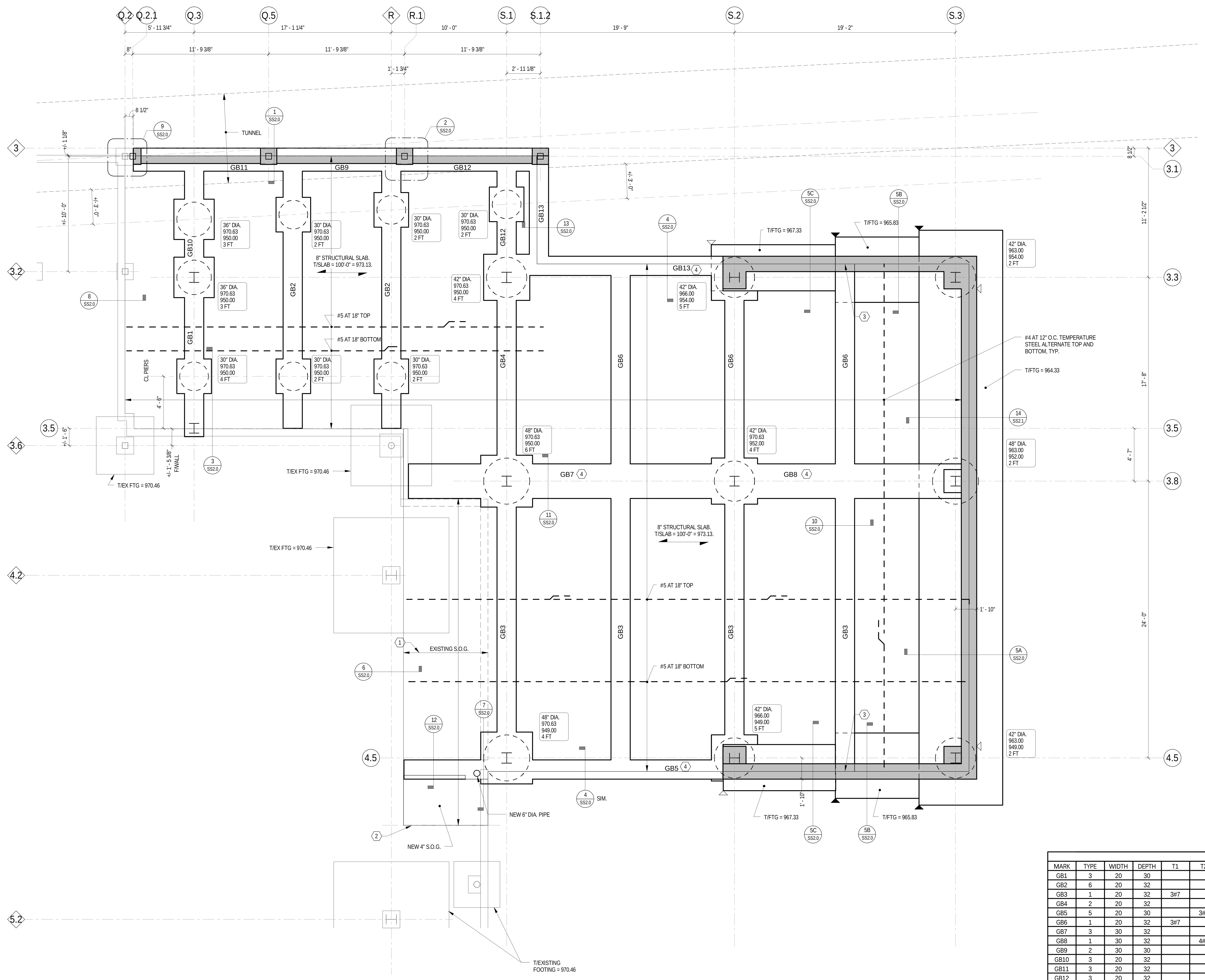

1 Foundation Plan
SS1.0
1/4" = 1'-0"

DRAWING NOTES:

1. REFER TO SS0.1 FOR GENERAL NOTES.
2. REFER TO SS0.2 AND SS0.3 FOR TYPICAL DETAILS.

KEY NOTES:

1. REMOVE EXISTING SLAB ON GRADE. SEE ARCH DRAWINGS FOR LOCATION. EXISTING STOREFRONT DO NOT DAMAGE.
2. PROVIDE TEIMPORARY SHORING TO PROTECT EXISTING S.O.G. DURING EXCAVATION.
3. GRADE BEAM POCKET, FULL DEPTH OF BEAM. PROVIDE DBR'S FOR ALL SCHEDULED TOP REINFORCEMENT.
4. INSTALL TOP GIRDER REINFORCING BELOW TOP GRADE BEAM REINFORCEMENT.

LEGEND:

X — DRILLED PIER DIAMETER
XXX'-X" — TOP OF DRILLED PIER ELEVATION
XXX'-X" — ESTIMATED DRILLED PIER TIP ELEVATION
X FT — MIN. ROCK SOCKET DEPTH

▼ INDICATES FOOTING STEP. SEE TYPICAL DETAIL.

▽ INDICATES WALL CONTROL/CONSTRUCTION JOINT. SEE TYPICAL DETAIL.

GRADE BEAM SCHEDULE

MARK	TYPE	WIDTH	DEPTH	T1	T2	T3	T4	T5	T6	T7	B1	B2	B3	F	STIRRUPS	NOTES
GB1	3	20	30					4#7		4#7	3#7				#4 (ST-3): AT 9" O.C. IN CANTILEVER, BAL AT 24" O.C.	
GB2	6	20	32							3#7	3#7		3#7		#4 (ST-1): AT 12" O.C. FULL LENGTH	
GB3	1	20	32	3#7			3#7				4#7				6#4 (ST-1): AT 12" O.C. EE, BAL AT 24" O.C.	
GB4	2	20	32					3#7			3#7				6#4 (ST-1): AT 12" O.C. EE, BAL AT 24" O.C.	
GB5	5	20	30		3#7					3#7	3#7		3#7		#4 (ST-1): AT 12" O.C. FULL LENGTH	1
GB6	1	20	32	3#7							3#7				6#4 (ST-1): AT 12" O.C. EE, BAL AT 24" O.C.	
GB7	3	30	32					4#7		5#7	3#7	2#7	3#7		#4 (ST-1): AT 12" O.C. FULL LENGTH	
GB8	1	30	32		4#7						3#7	2#7			#4 (ST-1): AT 12" O.C. FULL LENGTH	
GB9	2	30	30					3#7			3#7				#4 (ST-1): AT 12" O.C. FULL LENGTH	
GB10	3	20	32							4#7	3#7				#4 (ST-3): AT 9" O.C. IN CANTILEVER, BAL AT 24" O.C.	3, 4
GB11	3	20	32					3#7		3#7	3#7		3#7		#4 (ST-1): AT 12" O.C. FULL LENGTH	
GB12	3	20	32							3#7	3#7				#4 (ST-1): AT 12" O.C. FULL LENGTH	3, 4
GB13	4	20	30		3#7						3#7				#4 (ST-1): AT 12" O.C. FULL LENGTH	1

NOTES:

1 EXTEND TOP BARS 11'-0" INTO ADJACENT WALL.
2 NOT USED
3 SCHEDULED TOP BARS CONTINUOUS FROM ADJACENT GRADE BEAM. OMIT SPLICE.
4 EXTEND B1 BARS INTO CANTILEVER 2" CLR OF END OF GRADE BEAM AND HOOK.

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Revised By:

Drawing Title: FOUNDATION PLAN

Project Title: SITE PREP FOR CT SCANNER

Date: 01/31/2013

Project No. 552 - CSI - 333

Approved: Project Manager RANDY FIORINA

Building Number 335

Checked FJE

Drawn VLB

Drawing No. SS1.0

Approved: Service Chief GARY ABRELI

Location 4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

VA Department of Veterans Affairs

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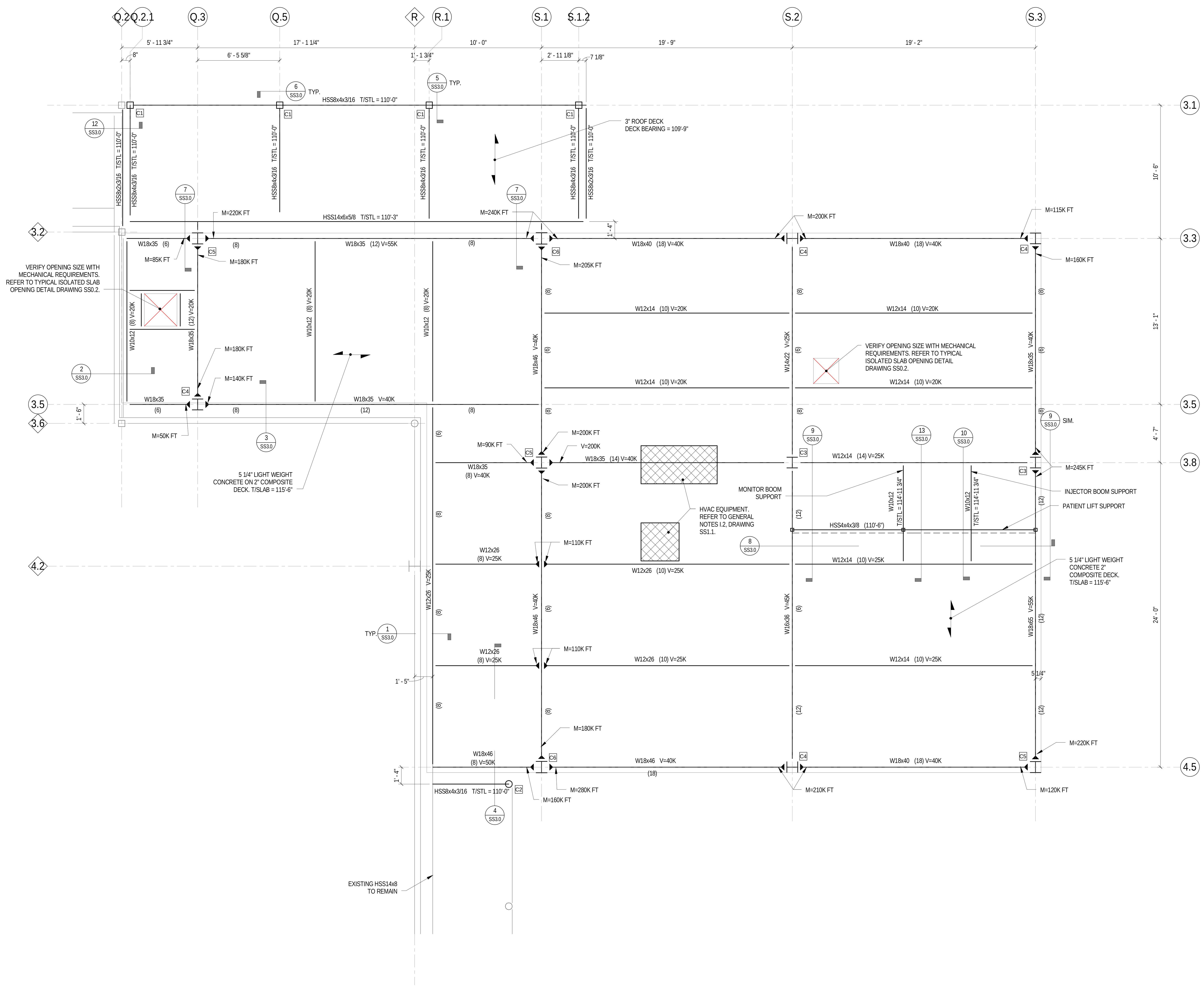
DRAWING NOTES:

1. REFER TO SS0.1 FOR GENERAL NOTES.
2. REFER TO SS0.2 AND SS0.3 FOR TYPICAL DETAILS.



1 / SS1.1 ROOF FRAMING PLAN
1/4" = 1'-0"

STEEL COLUMN SCHEDULE

	C1	C2	C3	C4	C5	C6
HIGH ROOF TOP OF SLAB EL. 115'-6" / LOW ROOF EL. SEE PLAN / EL. 100'-0"	HSS6x6x5/16	6" DIA. PIPE	W10x49 (2'-0" TYP.)	W10x60	W10x68	W10x88
BASE PLATE (T x W x L)	3/4"x12"x12"	3/4"x12"x12"	1-1/2"x18"x18"	1-1/2"x18"x18"	1-1/2"x18"x18"	1-1/2"x18"x18"

NOTE: REFER TO TYPICAL COLUMN BASE DETAIL ON SS0.2 FOR ANCHOR BOLT SIZE AND ADDITIONAL INFORMATION.

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Revised By:

Drawing Title: ROOF FRAMING PLAN

Project Title: SITE PREP FOR CT SCANNER

Date: 01/31/2013

Project No.: 552 - CSI - 333

Approved: Project Manager: RANDY FIORINA

Approved: Service Chief: GARY ABRELI

Building Number: 335

Checked: FJE

Drawn: VLB

Location: 4100 WEST THIRD STREET DAYTON, OH 45428

Drawing No.: SS1.1

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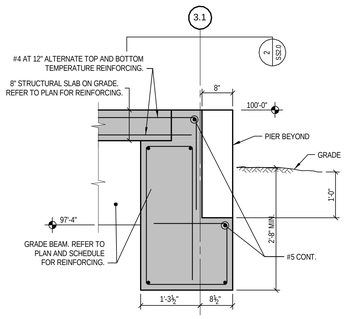
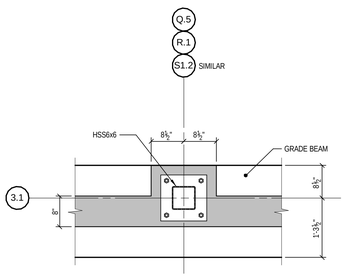
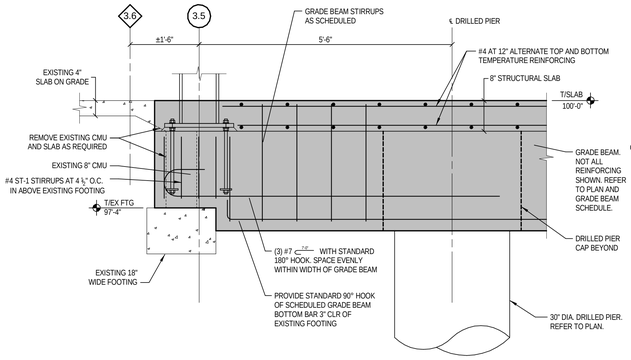
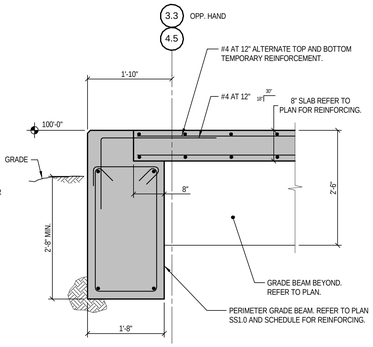
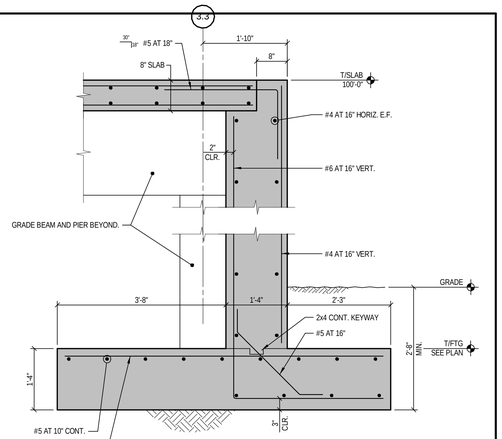










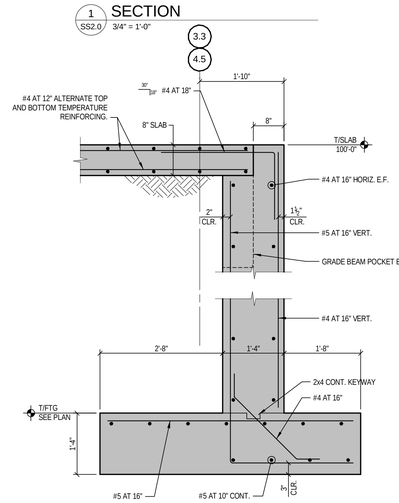
1 SECTION SS2.0 3/4" = 1'-0"

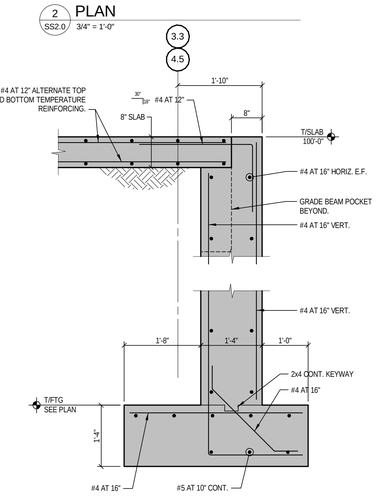
2 PLAN SS2.0 3/4" = 1'-0"

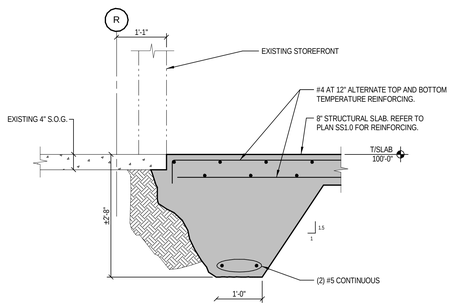
3 SECTION SS2.0 3/4" = 1'-0"

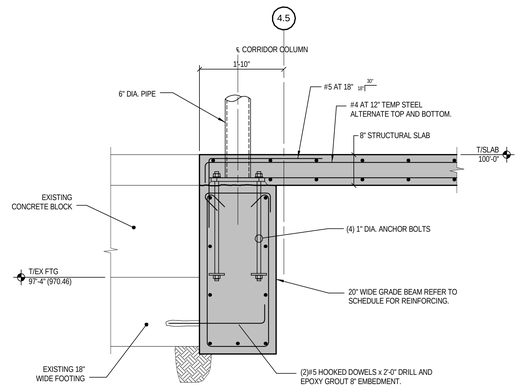
4 DETAIL SS2.0 3/4" = 1'-0"

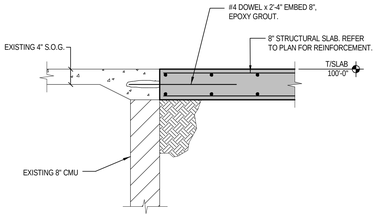
5A DETAIL SS2.0 3/4" = 1'-0"











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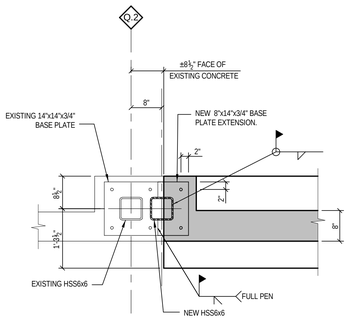
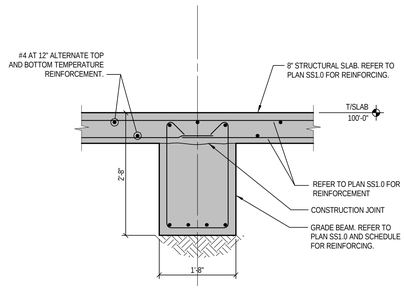
5C DETAIL SS2.0 3/4" = 1'-0"

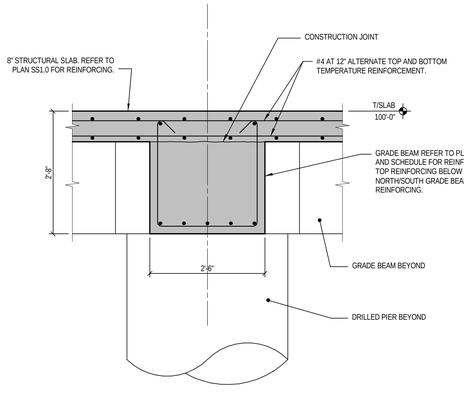
6 DETAIL SS2.0 3/4" = 1'-0"

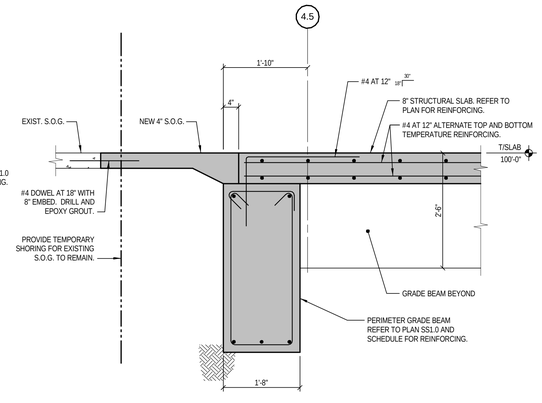
7 DETAIL SS2.0 3/4" = 1'-0"

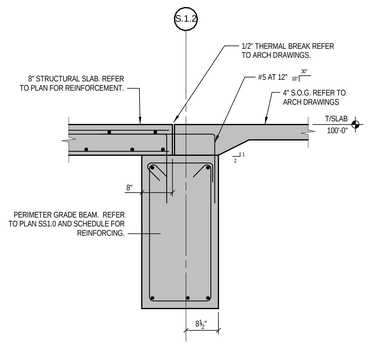
8 DETAIL SS2.0 3/4" = 1'-0"











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10 DETAIL SS2.0 3/4" = 1'-0"

11 DETAIL SS2.0 3/4" = 1'-0"

12 DETAIL SS2.0 3/4" = 1'-0"

13 DETAIL SS2.0 3/4" = 1'-0"

3023.00

Revisions	Date
ISSUED FOR BID	1/31/13
- -	- - -

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STATE OF OHIO · FRANK JOSEPH ELLERT · E - 50492 · REGISTERED PROFESSIONAL ENGINEER

Professional Seal

Revised By:

Drawing Title: **FOUNDATION DETAILS**

Project Title: SITE PREP FOR CT SCANNER

Date: 01/31/2013

Project No.: 552 - CSI - 333

Approved: Project Manager: RANDY FIORINA

Building Number: 335

Checked: FJE

Drawn: VLB

Approved: Service Chief: GARY ABRELI

Location: 4100 WEST THIRD STREET DAYTON, OH 45428

Drawing No.: SS2.0

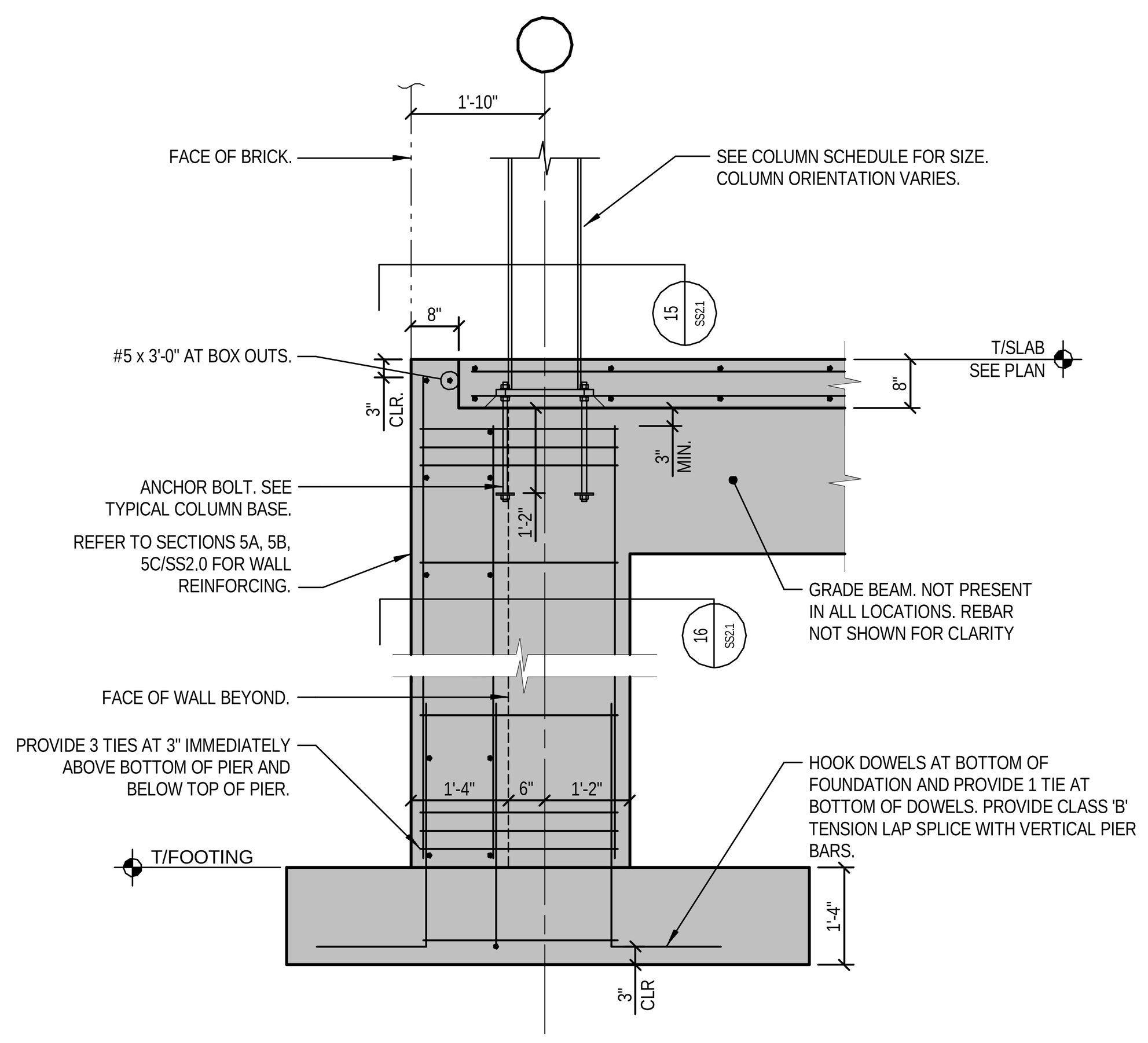
VAMC, DAYTON

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

10/30/13 5:08:08 PM

File Name



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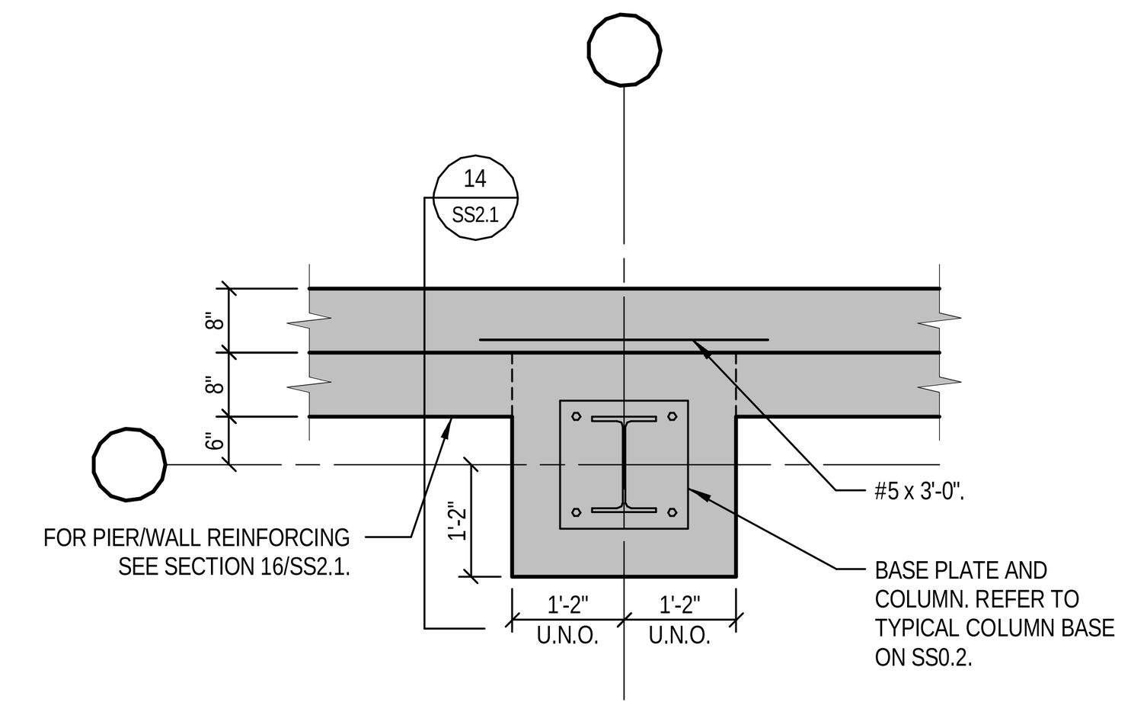

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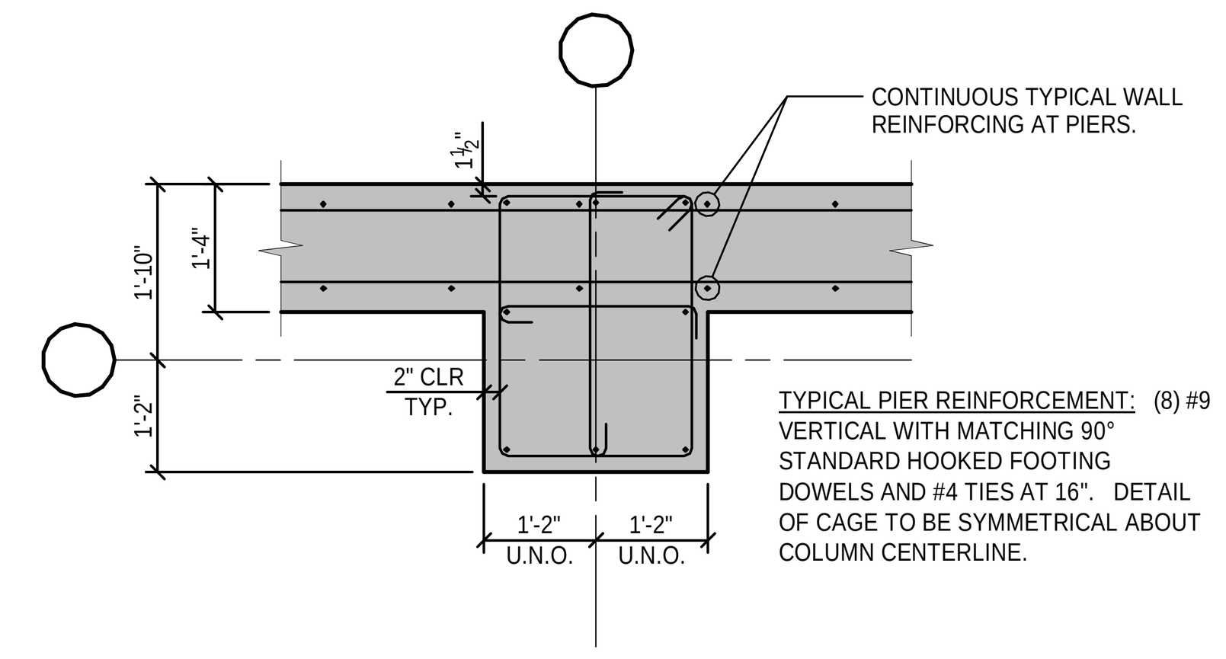

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SECTION
1/2" = 1'-0"

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Professional Seal

Revised By:

Drawing Title
FOUNDATION DETAILS

Approved: Project Manager
RANDY FIORINA

Approved: Service Chief
GARY ABRELI

Project Title
SITE PREP FOR CT SCANNER

Building Number
335

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Location
4100 WEST THIRD STREET
DAYTON, OH 45428

Date
01/31/2013

Project No.
552-CSI-333

Drawing No.
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VAMC, DAYTON

VA
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

1/29/2013 5:08:09 PM
File Name

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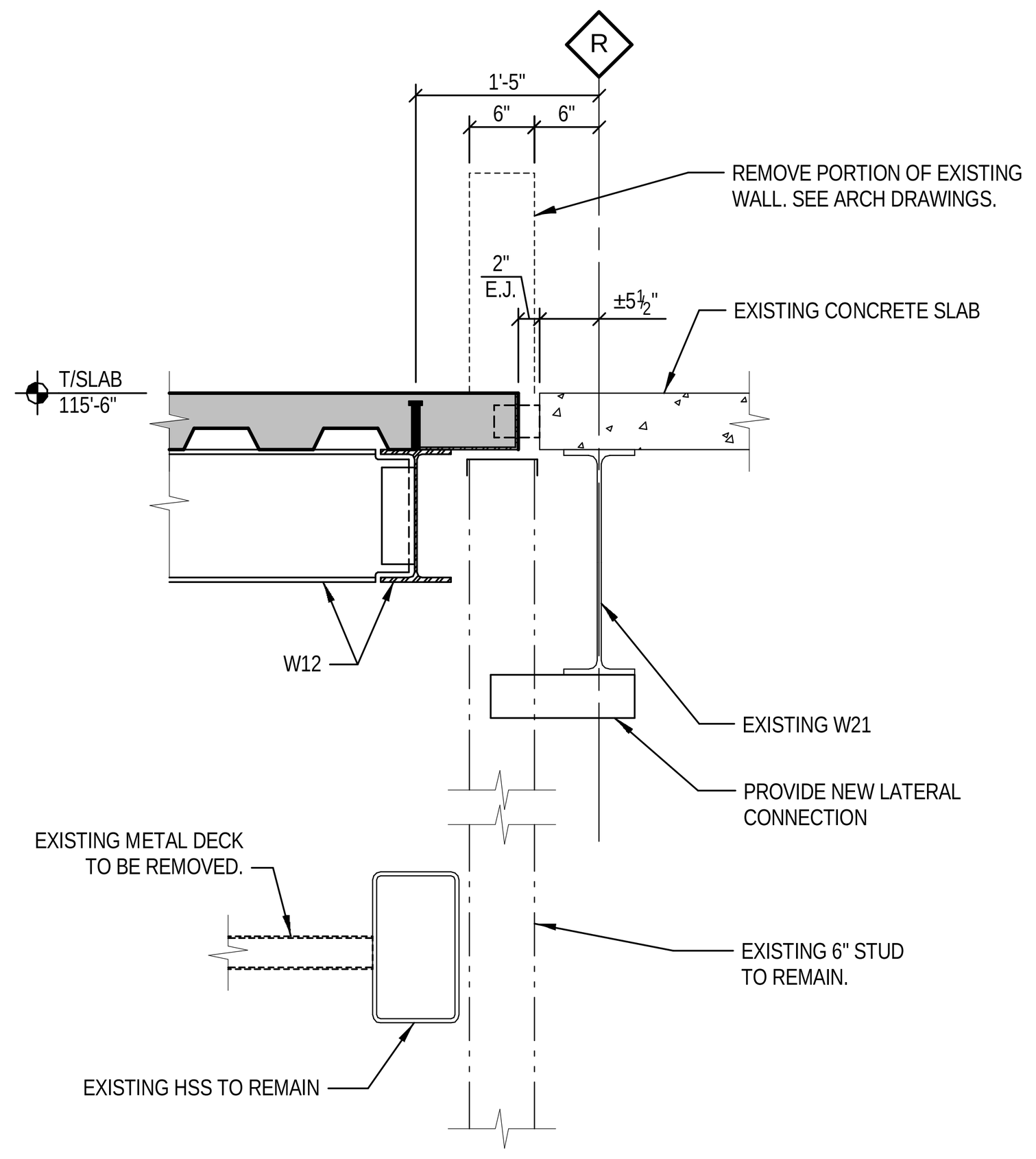

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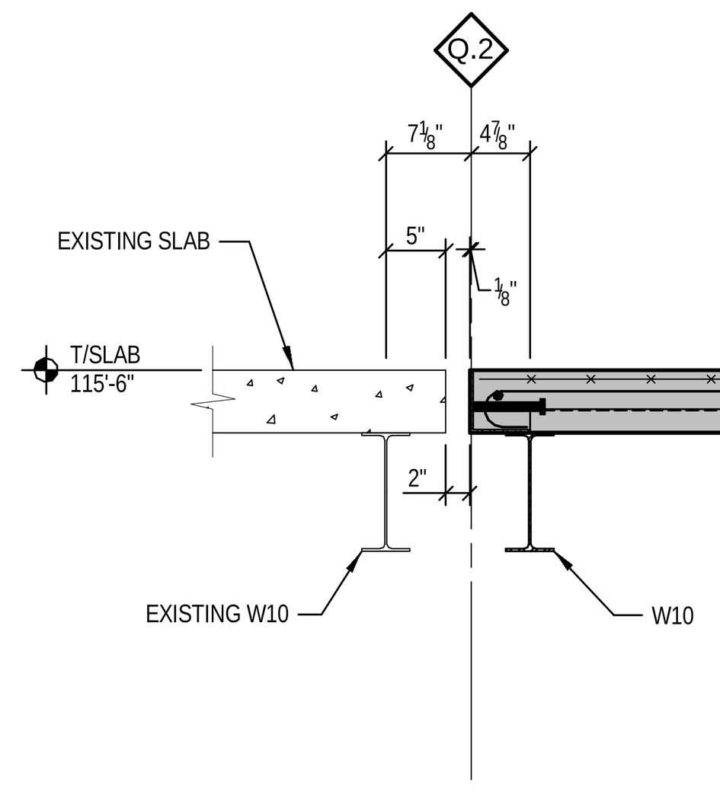

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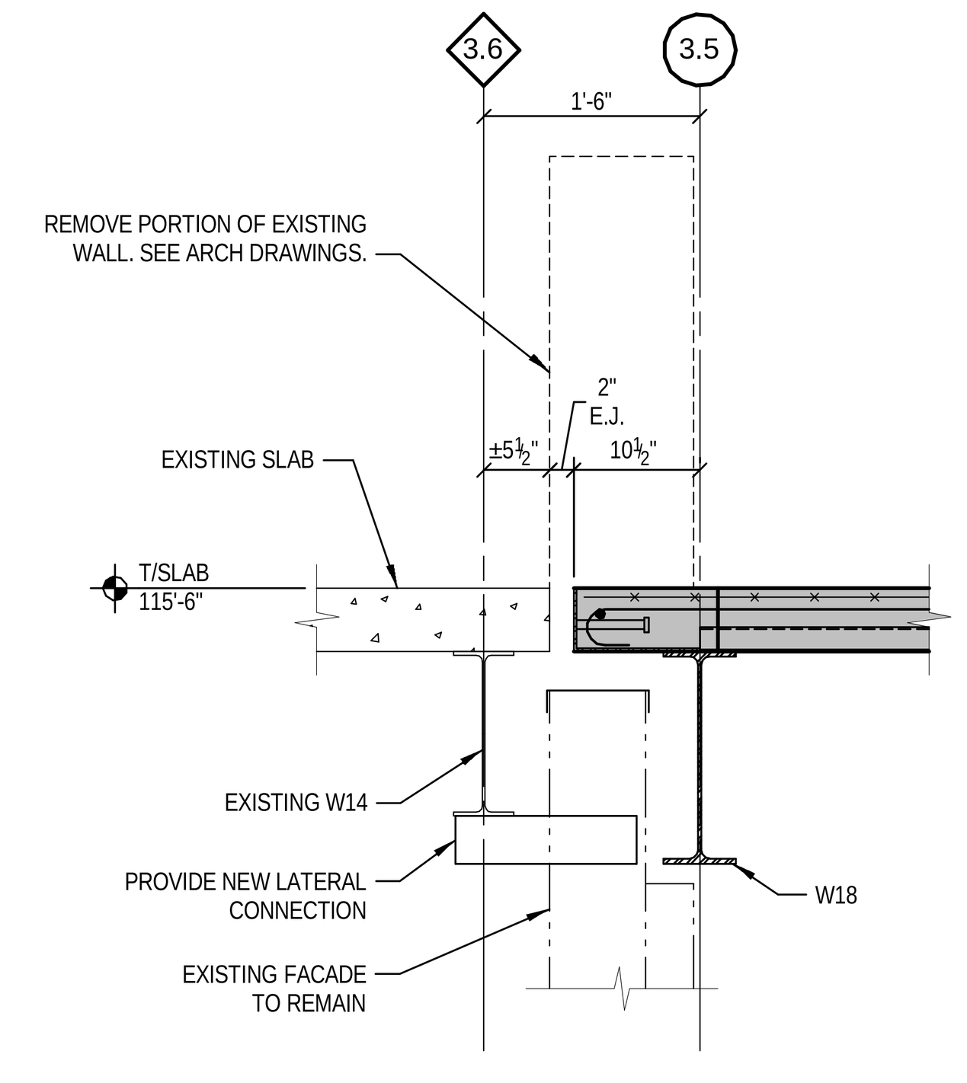

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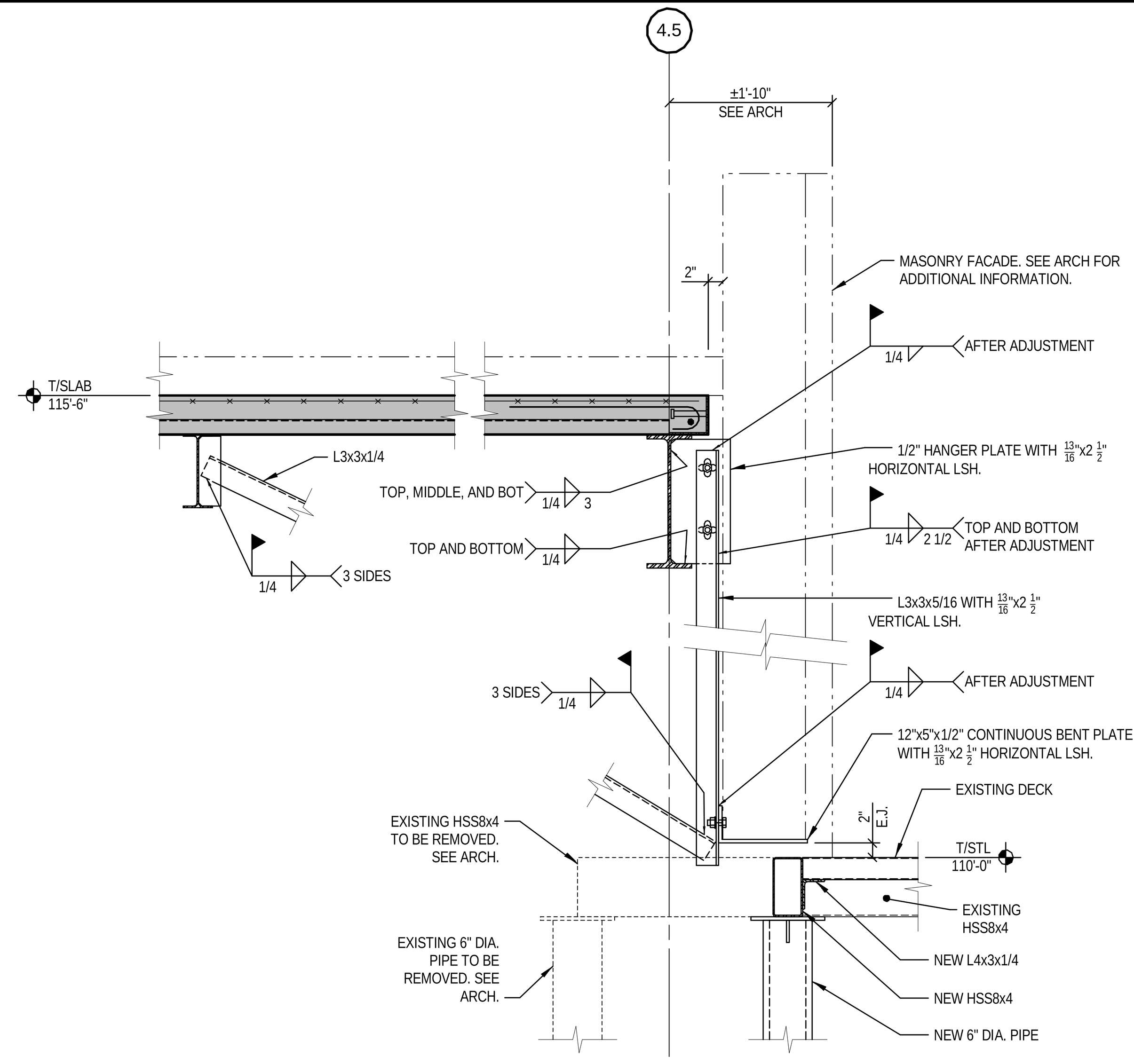

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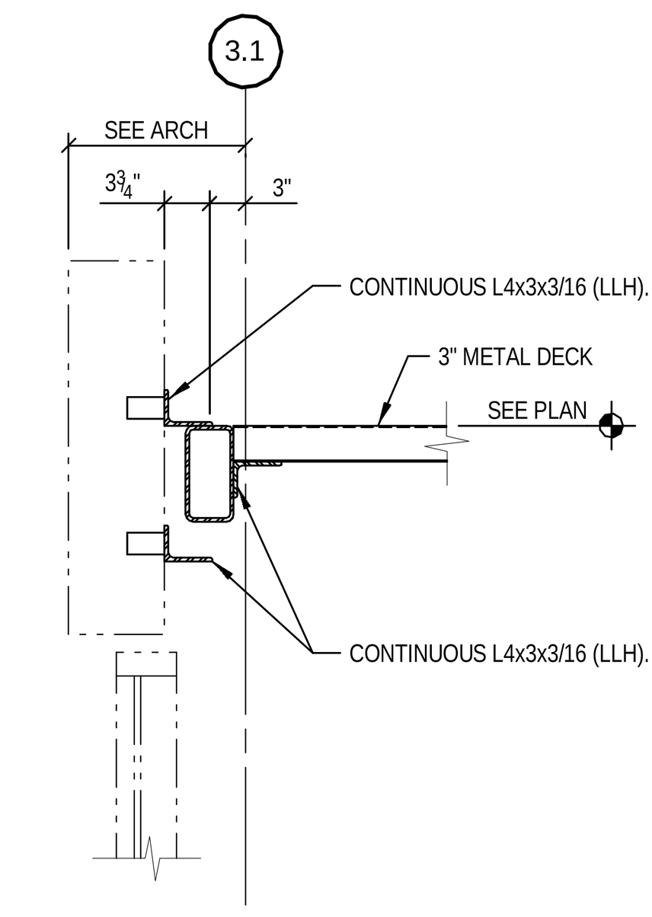

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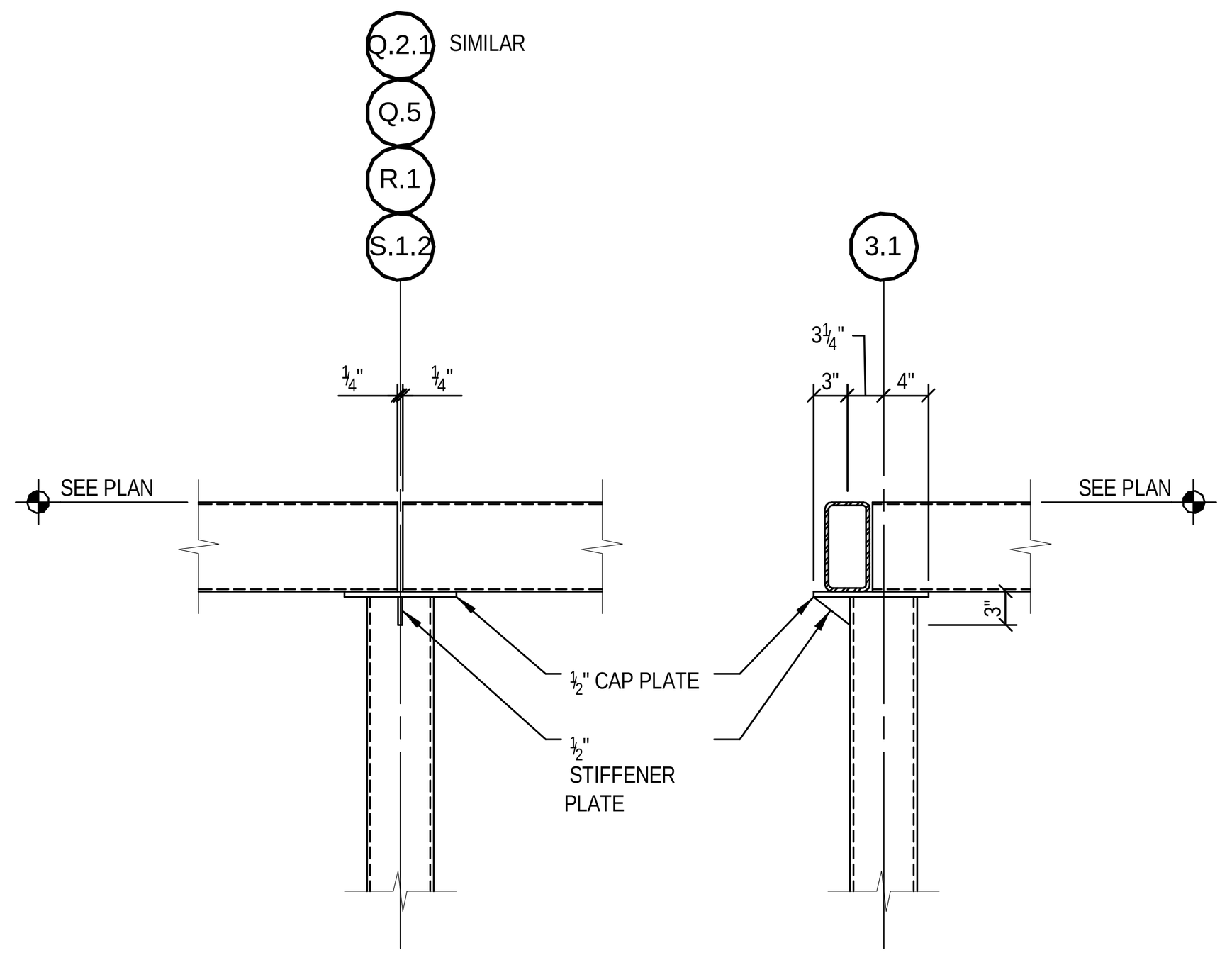

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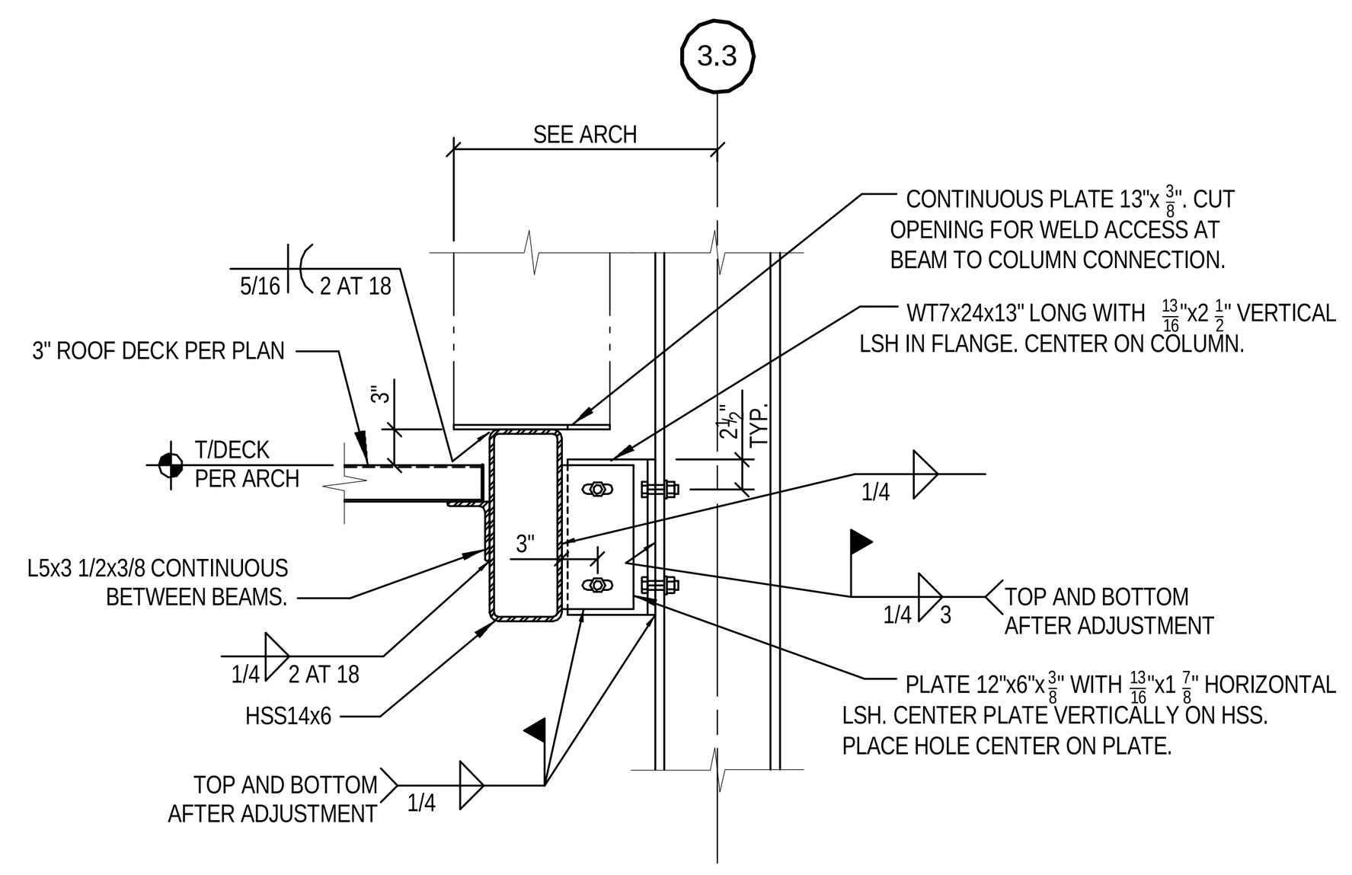

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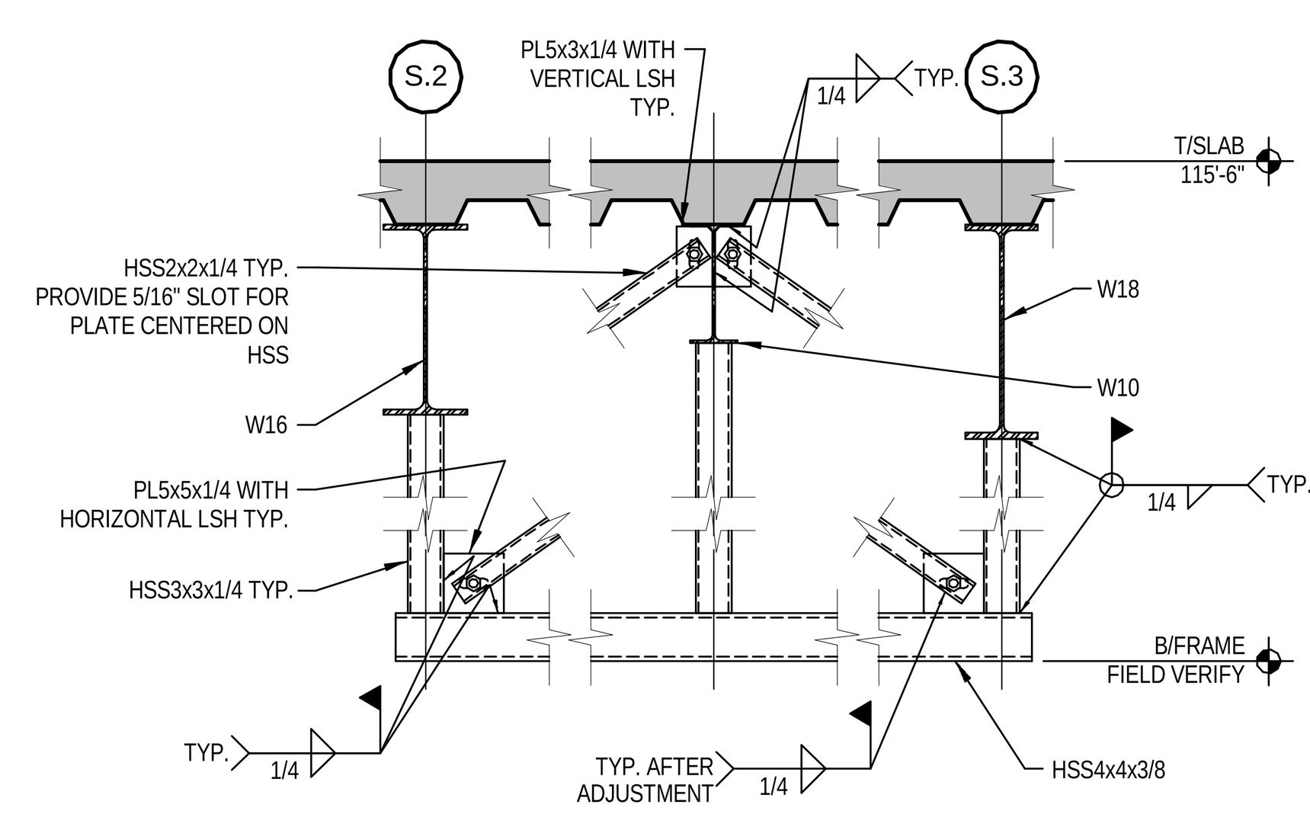

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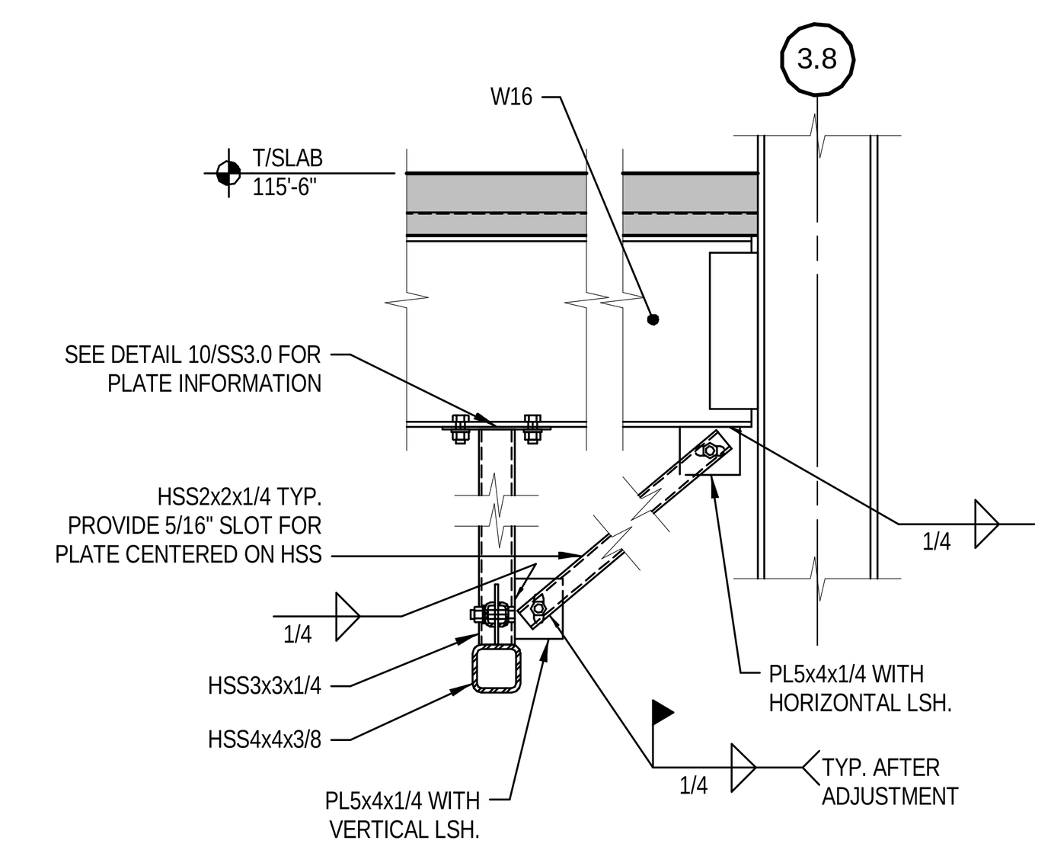

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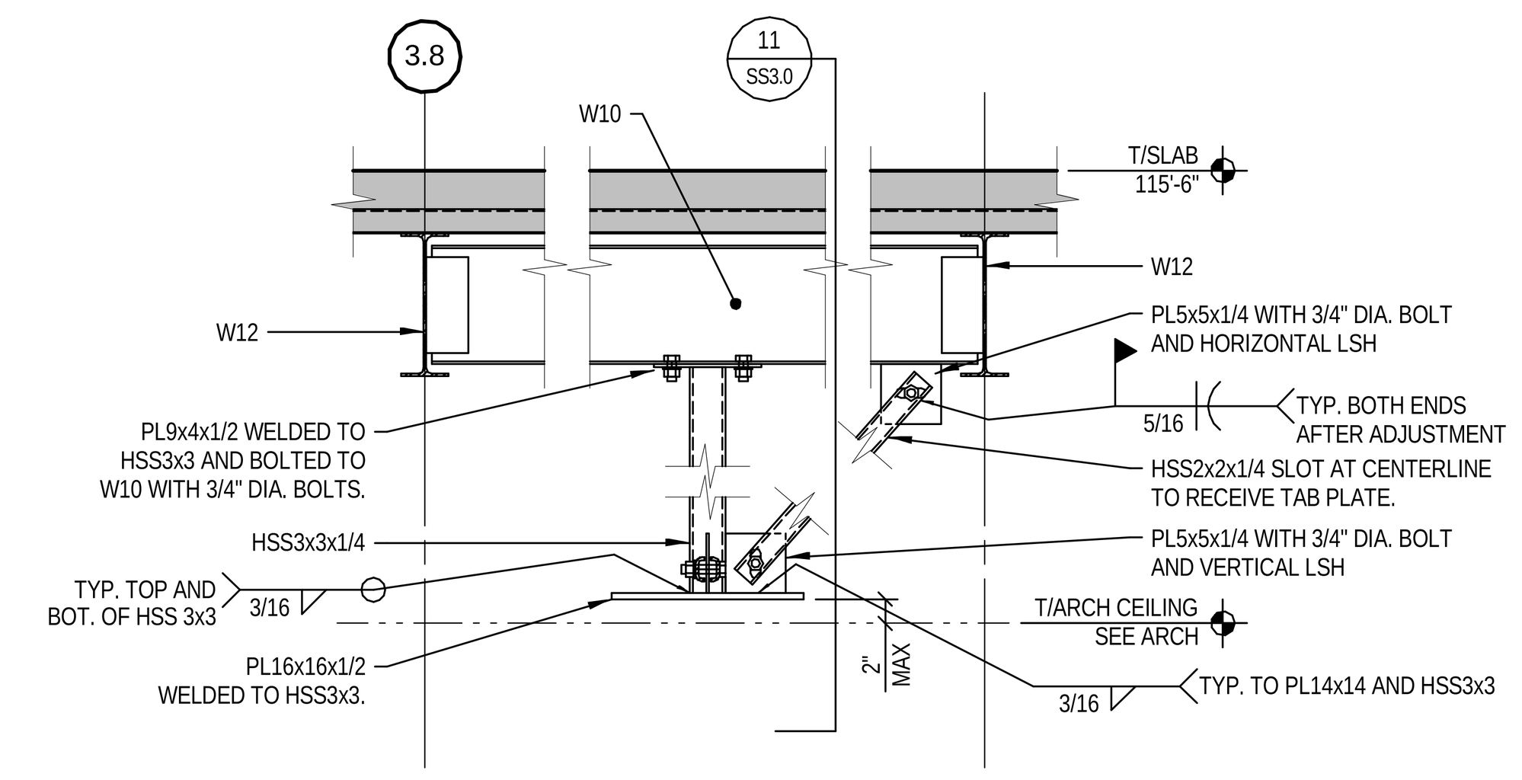
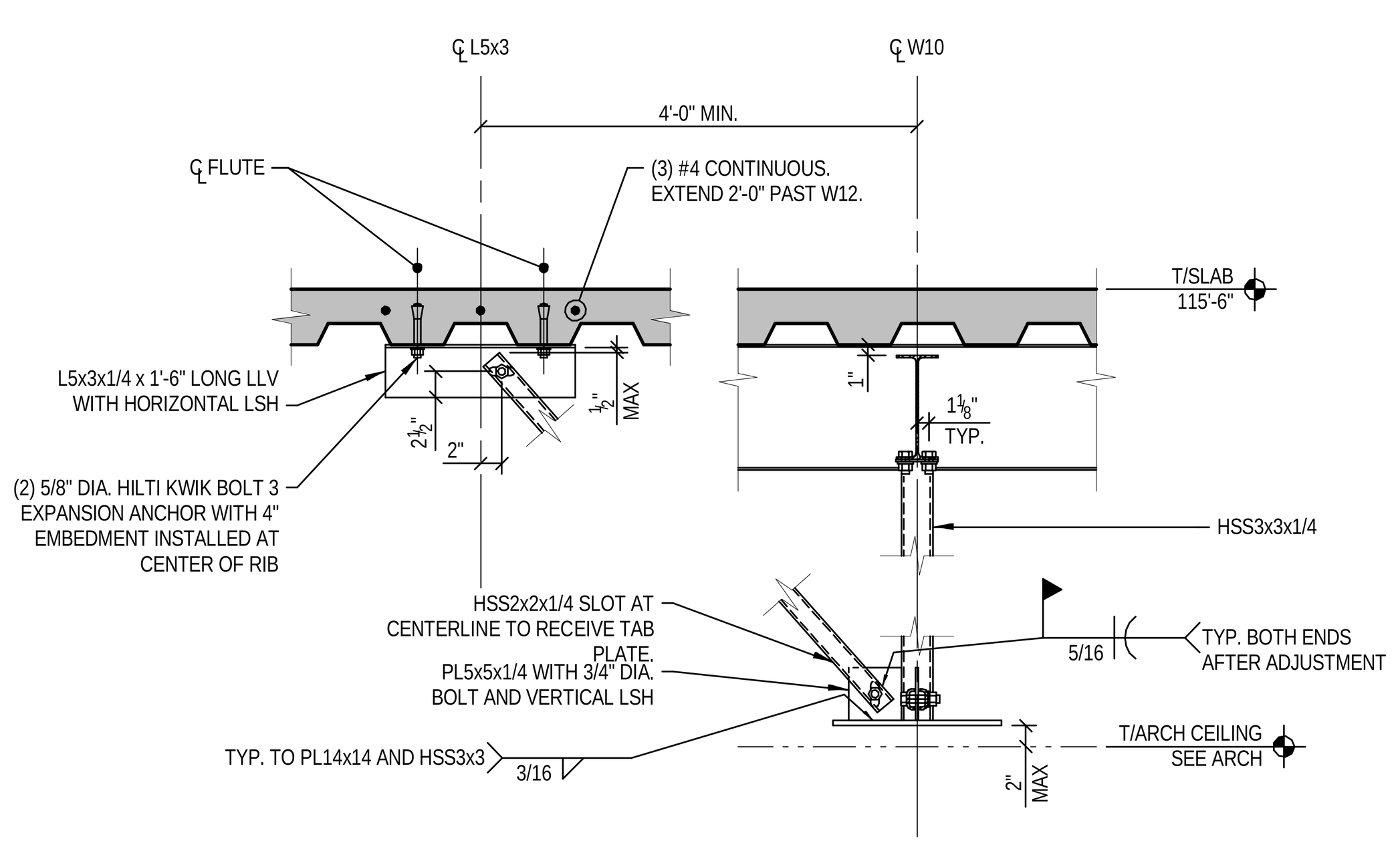


NOTE:
FIELD VERIFY DIMENSIONS FOR PLACEMENT OF MONITOR PIPE LOCATION AND THAT FRAME DOES NOT INTERFERE WITH MECHANICAL PRIOR TO FABRICATION.

10 SS3.0 SECTION
3/4" = 1'-0"



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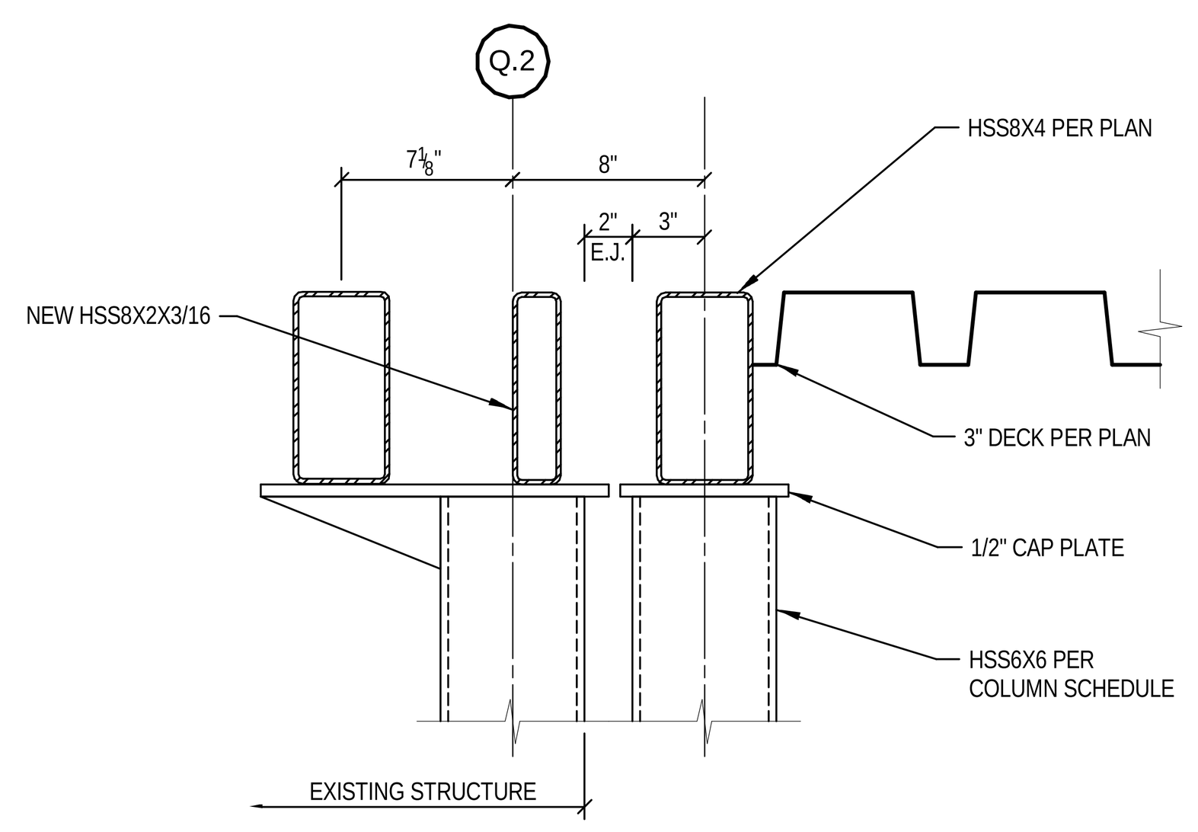
3/4" = 1'-0"



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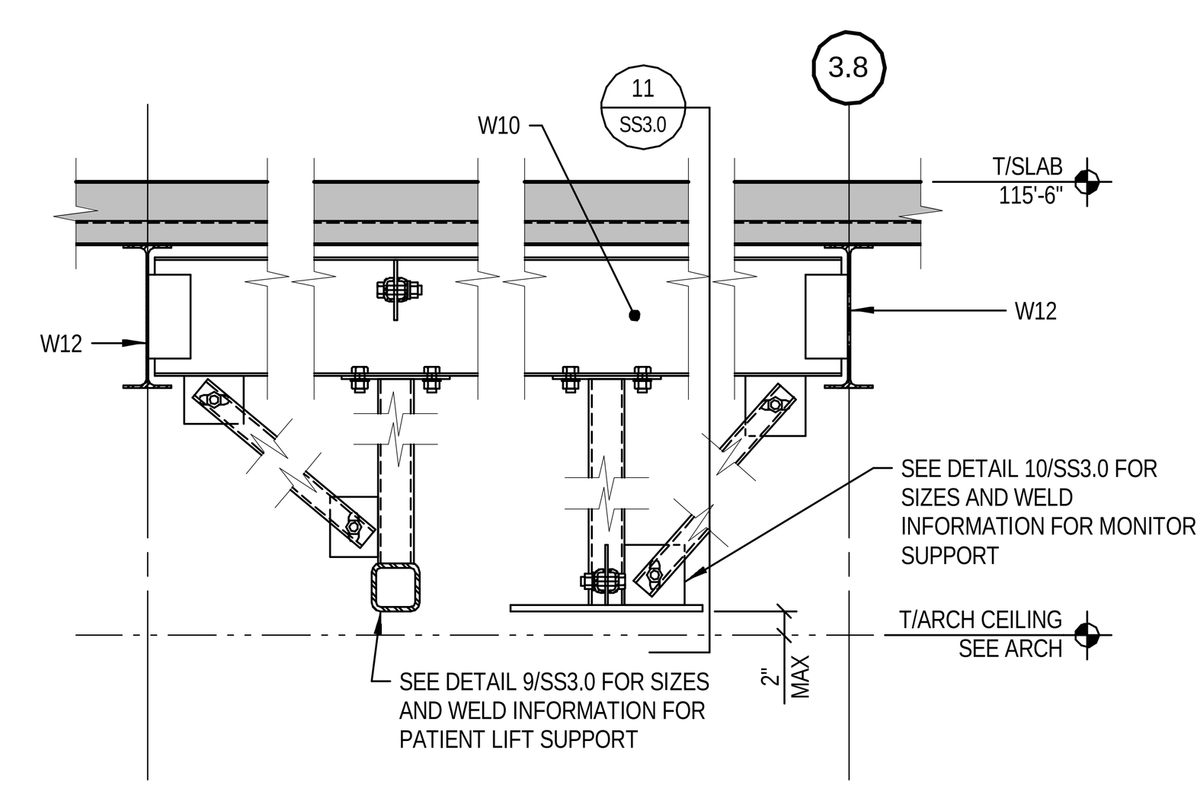
1 1/2" = 1'-0"



NOTE:
FIELD VERIFY DIMENSIONS FOR PLACEMENT OF MONITOR PIPE LOCATION AND THAT FRAME DOES NOT INTERFERE WITH MECHANICAL TO FABRICATION.

13 SS3.0 SECTION
3/4" = 1'-0"

3023.00

Revisions	Date
ISSUED FOR BID	1/31/13
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FRANK JOSEPH ELLERT
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REGISTERED PROFESSIONAL ENGINEER
Professional Seal

Revised By:

Drawing Title: FRAMING DETAILS

Project Title: SITE PREP FOR CT SCANNER

Date: 01/31/2013

Project No.: 552 - CSI - 333

Approved: Project Manager: RANDY FIORINA

Building Number: 335

Checked: FJE

Drawn: VLB

Drawing No.: SS3.0

Approved: Service Chief: GARY ABRELI

Location: 4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

VA Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

1/29/2013 5:08:10 PM
File Name

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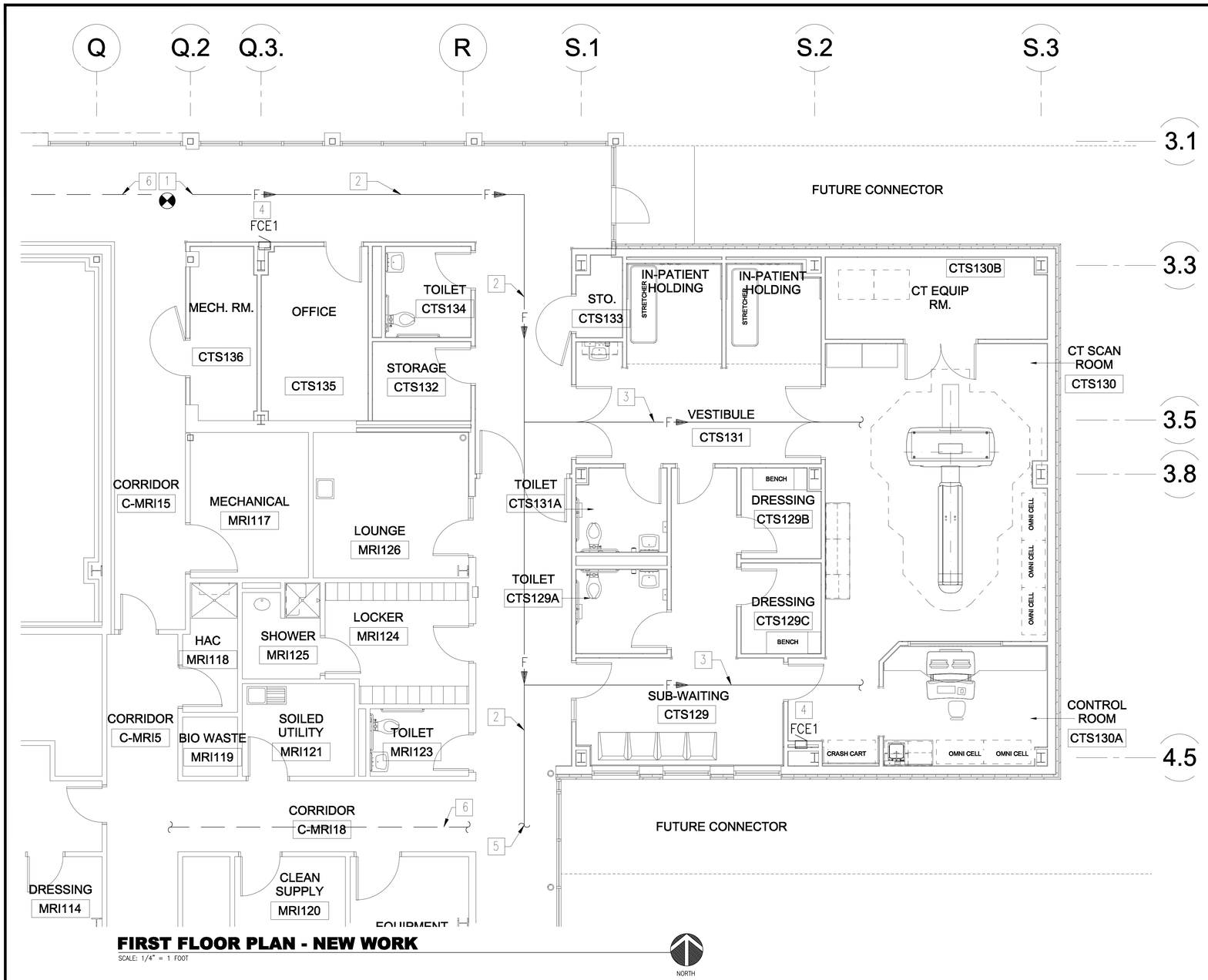


FIRST FLOOR PLAN - NEW WORK

SCALE: 1/4" = 1 FOOT

NORTH

GENERAL NOTES – FIRE SUPPRESSION

1. PROVIDE COMPLETE WET PIPE FIRE SPRINKLER PROTECTION PER NFPA 13 AND WET STANDPIPE PROTECTION PER NFPA 14 THROUGHOUT THE ENTIRE BUILDING ADDITION AS FOLLOWS:
   a. SPRINKLER SYSTEM DESIGN SHALL BE BASED ON ORDINARY HAZARD OCCUPANCY IN MECH. EQUIP. ROOMS, STORAGE AREAS HYDRAULICALLY CALCULATED WITH A DENSITY OF .15 GPM/SQ. FT. FOR 1500 SQ. FT. REMOTE AREA OF SPRINKLER OPERATION FOR EACH DESIGN AREA. SPRINKLER SPACING SHALL NOT EXCEED 130 SQ. FT. PER SPRINKLER. ALL OTHER AREAS TO BE LIGHT HAZARD.
2. SPRINKLERS SHALL BE LOCATED IN RELATIONSHIP TO LIGHTING FIXTURES & HVAC DIFFUSERS. SPRINKLERS SHALL BE CENTERED IN CEILING TILES (OR AT THE "QUARTER" POINTS) & MAINTAIN A SYMMETRICAL PATTERN FOR AN AESTHETICALLY PLEASING EFFECT. NO PIPING SHALL BE EXPOSED W/ THE EXCEPTION OF PIPING IN AREAS OF EXPOSED CONSTRUCTION. SEE DETAIL 2 THIS SHEET.
3. FIRE PROTECTION RISERS AND MAINS ARE SHOWN FOR COORDINATION PURPOSES AND SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO LOCATIONS INDICATED ON THIS PLAN.
4. ALL PIPING SHALL BE CONCEALED IN AREAS OF FINISHED CONSTRUCTION. FINISHED AREAS WITH EXPOSED STRUCTURE SHALL HAVE ALL PIPING RUN ABOVE THE BOTTOM CHORD OF TRUSSES UNLESS NOTED OTHERWISE.
5. ALL FIRE PROTECTION INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE & NFPA STANDARDS.
6. THESE PLANS ARE NOT PREPARED FOR SUBMITTAL & APPROVAL OF FIRE PROTECTION SYSTEMS. PER VA FIRE PROTECTION DESIGN MANUAL, THIS PLAN IS PROVIDED TO ASSIST CONTRACTOR IN PREPARING A COMPLETE FIRE PROTECTION BID. THE CONTRACTOR SHALL INCLUDE ALL WORK AND COSTS OF MATERIALS AND INSTALLATION, AND PREPARATION OF DRAWINGS AND HYDRAULIC CALCULATIONS.
7. SUBMIT COMPLETE SPRINKLER / PIPING DRAWINGS AND HYDRAULIC CALCULATIONS TO AUTHORITIES HAVING JURISDICTION.
8. PROVIDE SUPERVISORY SWITCHES FOR ALL VALVES CONTROLLING THE FIRE SPRINKLER AND STANDPIPE SYSTEMS.
9. CONTRACTOR SHALL PERFORM A NEW FLOW TEST PRIOR TO PREPARING HYDRAULIC CALCULATIONS.
10. PRIOR TO FABRICATION OR INSTALLATION OF PIPING, THE CONTRACTOR SHALL COORDINATE LOCATIONS & ELEVATIONS OF OTHER EQUIPMENT, INCLUDING, BUT NOT LIMITED TO LIGHT FIXTURES, DIFFUSERS, DUCTWORK, CONDUITS, PIPING, & CEILING GRID.
11. COORDINATE ALL SPRINKLER HEAD LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO LAYOUT, FABRICATION, AND INSTALLATION OF PIPING AND HEADS.
12. COORDINATE FINISH OF SPRINKLER HEADS WITH ARCHITECT PRIOR TO PURCHASE OR INSTALLATION.

FIRE SUPPRESSION DRAWING NOTES

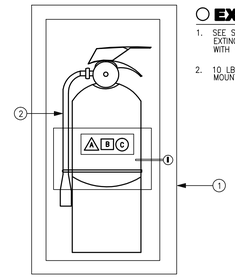
1. STARTING POINT OF CONNECTION TO EXISTING BUILDING 335 WET-PIPE FIRE SUPPRESSION SYSTEM. CONTRACTOR TO FIELD-VERIFY EXACT LOCATION OF CONNECTION POINT.
2. FIRE SUPPRESSION MAIN LINE PIPING
3. FIRE SUPPRESSION BRANCH PIPING
4. FIRE PROTECTION EQUIPMENT – FIRE EXTINGUISHER CABINET PER NFPA 10. CABINET FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. FIRE EXTINGUISHER FURNISHED AND INSTALLED BY FIRE SUPPRESSION CONTRACTOR. SEE DETAIL 1 THIS SHEET.
5. ENDING POINT OF CONNECTION TO EXISTING BUILDING 335 WET-PIPE FIRE SUPPRESSION SYSTEM. CONTRACTOR TO FIELD-VERIFY EXACT LOCATION OF CONNECTION POINT.
6. EXISTING PIPING INSTALLED IN BUILDING 335 (MRI) CORRIDOR.

LEGEND – FIRE PROTECTION

- CWS — COMBINATION FIRE AND DOMESTIC WATER SERVICE
- WS — DOMESTIC WATER SERVICE
- FS — FIRE SERVICE
- DIRECTION OF FLOW
- CHECK VALVE
- PRESSURE GAUGE
- FIRE MAIN
- SUPERVISED VALVE
- FSS — FLOW SWITCH
- PENDENT / UPRIGHT TYPE SPRINKLER HEAD
- SIDEWALL TYPE SPRINKLER HEAD
- RECESSED PENDENT TYPE SPRINKLER HEAD
- RECESSED SIDEWALL TYPE SPRINKLER HEAD
- [1] DRAWING NOTES
- (1) DETAIL NOTES
- [123] ROOM NUMBER

EXTINGUISHER NOTES

1. SEE SPECIFICATION SECTION 10 44 13 "FIRE EXTINGUISHER CABINET." INSTALL IN COMPLIANCE WITH NFPA AND ADA STANDARDS.
2. 10 LBS. DRY TYPE CHEMICAL FIRE EXTINGUISHER MOUNTED WITHIN CABINET ENCLOSURE.

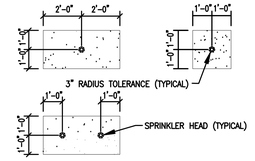


NOTE : PROVIDE LABELS/SIGNAGE AS PER NFPA.

FIRE EXTINGUISHER AND CABINET

SCALE: NONE

1 / FA1



NOTE:
SPRINKLERS SHALL BE POSITIONED AS SHOWN WITH A MAXIMUM 3" TOLERANCE. SHOULD ANY PART OF THIS TOLERANCE BE USED, THEN ALL THE SPRINKLERS IN THE SAME ROW SHALL BE OFFSET BY THAT SAME DISTANCE IN THE SAME DIRECTION.
(EXAMPLES OF 2'-0" x 4'-0" & 2'-0" x 2'-0" CEILING TILE)

TYPICAL SPRINKLER LOCATIONS

SCALE : NONE

2 / FA1

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Revisions	Date

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Email: engineers@contechdesign.com Engineer Project # 12014

STATE OF OHIO — PARMA NAND SINHA — 42622 — REGISTERED PROFESSIONAL ENGINEER

Revised By:

Drawing Title: **FIRE SUPPRESSION NEW WORK FLOOR PLANS**

Project Title: SITE PREP FOR CT SCANNER

Date: 01-31-2013

Project No.: 552-CSI-333

Approved: Project Manager: RANDI FIORINA

Building Number: 335 | Checked: PNS | Drawn: CONTECH

Drawing No.: FA 1.0

Approved: Service Chief: GARY ABREU

Location: 4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

PLUMBING FIXTURE SCHEDULE

THE PC SHALL FURNISH AND INSTALL, PROVIDE ROUGH-IN, AND ALL FINAL CONNECTIONS FOR ALL FIXTURES AND EQUIPMENT SHOWN ON THIS SCHEDULE AND ON THE DRAWINGS. COORDINATE AND VERIFY FINAL LOCATIONS OF EQUIPMENT WITH ARCH. AND PLUMBING DRAWINGS PRIOR TO INSTALLATION OF ANY FIXTURES, EQUIPMENT, AND/OR PIPING.

SYMBOL	DESCRIPTION	MOUNTING HEIGHT	SUPPLY			WASTE AND VENT							FIXTURE		SUPPLY TRIM		SUPPLY/STOP		WASTE TRIM		TRAP/FIXTURE DR.		MISC.		CARRIER		SEE FIXTURE SCHEDULE NOTES
			C.W.	H.W.	T.W.	FIX OUTLET	TRAP	FIX DRAIN	WASTE-MIN.	VENT-MIN.	INDIRECT	AIR GAP	AIR BREAK	MFR.	CAT. NOS.	MFR.	CAT. NOS.	MFR.	CAT. NOS.	MFR.	CAT. NOS.	MFR.	CAT. NOS.	MFR.	CAT. NOS.	MFR.	UNIT	
WC1	WATER CLOSET/WALL HUNG/AUTO FLUSH VALVE	15" RIM	1"	--	--	4"	INT	4"	4"	2"	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	2,5
WC2	WATER CLOSET/WALL HUNG/AUTO FLUSH VALVE/A.D.A.	17" RIM	1"	--	--	4"	INT	4"	4"	2"	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	2,5
L1	LAVATORY/ WALL HUNG / 20" X 27" / A.D.A.	34" RIM	½"	½"	--	1¼"	1¼"	1¼"	1½"	1½"	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	1,2
WHD1	WALL HYDRANT/ NON-FREEZE/ VACUUM BREAKER	20" AFG	¾"	--	--	--	--	--	--	--	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--
TP1	TRAP PRIMER / ABOVE FLOOR / 1/2" BALL VALVE ON BRANCH	N/A	½"	--	--	--	--	--	--	--	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	3
S1	SINK-SINGLE BOWL VIT. CHINA UNDERMOUNT 21-1/4" X 15-1/4"	UNDER C.	½"	½"	--	1½"	1½"	--	1½"	1½"	--	--	--	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	--	UNIT	4,5

SCHEDULE NOTES:

1. COLOR SELECTION BY ARCHITECT.
2. PROVIDE CHROME PLATED ESCUTCHEONS AND NIPPLES TO WALL.
3. INSTALL DISTRIBUTION UNIT AS NECESSARY FOR CONNECTION TO MULTIPLE FLOOR DRAINS.
4. FAUCET: GOOSENECK (8") WITH 4" WRIST BLADES BOTH SIDES, 2.0 GPM AERATOR, 6.5" DEPTH.
5. PROVIDE LINE-SIZE SHOCK ABSORBERS ON ALL HW AND CW BRANCHES.

DRAIN SCHEDULE

MARK	MANUFACTURER (OR APPROVED EQUAL) CATALOG NOS.	TYPE: FLOOR	TYPE: ROOF	TYPE: AREAWAY	TYPE: WALL	BODY: CAST IRON	BODY: BRASS	BODY: ACID RESIST.	BODY: STAINLESS STEEL	OUTLET: SIZE	OUTLET: BOTTOM	OUTLET: SIDE	STRAINER/GRATE: SIZE	STRAINER/GRATE: ADJUSTABLE	STRAINER/GRATE: FLAT	STRAINER/GRATE: DOME	STRAINER/GRATE: RECESSED	STRAINER/GRATE: FUNNEL	STRAINER/GRATE: HINGED	STRAINER/GRATE: -	TOP FINISH: NICKEL-BRONZE	TOP FINISH: CAST IRON	TOP FINISH: ACID RESIST.	TOP FINISH: STAINLESS STEEL	ADDITIONAL FEATURES: ANCHOR FLANGE	ADDITIONAL FEATURES: FL.SHG. CLAMP	ADDITIONAL FEATURES: DRL. DRAINAGE	ADDITIONAL FEATURES: SED. BASKET	ADDITIONAL FEATURES: AUX. STRAINER	ADDITIONAL FEATURES: BEARING PAN	ADDITIONAL FEATURES: U/DECK CLAMP	ADDITIONAL FEATURES: TRAP PRIMER TAP	SEE DRAIN SCHEDULE NOTES
FD1	N/A	●	—	—	—	●	—	—	—	3"	●	—	5" RD	●	●	—	—	—	—	●	—	—	—	●	—	●	—	—	—	—	—	1
CO	N/A	●	—	—	—	●	—	—	—	3"	●	—	5" RD	●	●	—	—	—	—	●	—	—	—	●	—	●	—	—	—	—	●	2
RD	N/A	—	●	—	—	●	—	—	—	4"	●	—	15" RD	●	—	●	—	—	—	—	●	—	—	●	●	—	—	—	●	●	—	
ERD	N/A	—	●	—	—	●	—	—	—	4"	●	—	15" RD	●	—	●	—	—	—	—	●	—	—	●	●	—	—	—	●	●	—	

SCHEDULE NOTES:

1. PROVIDE TRAP PRIMER CONNECTIONS TO ALL FLOOR DRAINS.
2. TAGS: TAG "STORM," "SANITARY," OR "LAB" TAGS AS APPLICABLE ON ALL CLEANOUT COVERS. SEE ISOMETRIC SHEET PL 2.0.

GENERAL NOTES – PLUMBING

A. ALL SANITARY PIPING IS BELOW THE FLOOR SLAB UNLESS OTHERWISE INDICATED.

B. ALL VENT AND STORM PIPING IS ABOVE THE CEILING (AS HIGH AS POSSIBLE IN EXPOSED STRUCTURAL AREAS) UNLESS OTHERWISE INDICATED.

C. ALL SUPPLY PIPING IS ABOVE THE CEILING (AT THE CEILING IN EXPOSED STRUCTURAL AREAS) UNLESS OTHERWISE INDICATED.

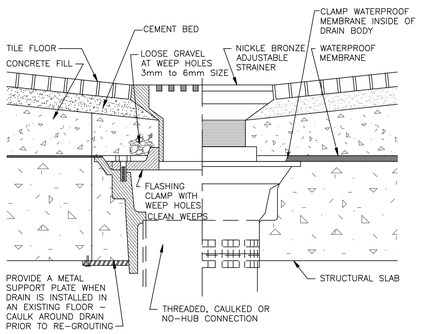
D. REFER TO SCHEDULES, DETAILS AND DIAGRAMS FOR ANY PIPING/PIPE SIZES NOT INDICATED ON FLOOR PLAN.

E. THE LOCATION AND SIZES OF ALL EXISTING PIPING HAS BEEN DETERMINED FROM EXISTING DRAWINGS. THE PLUMBING CONTRACTOR SHALL VERIFY, BEFORE STARTING ANY INSTALLATION, THE EXACT SIZE AND LOCATION OF ALL EXISTING PIPING AT THE POINTS OF CONNECTION AND THAT THERE IS ADEQUATE SPACE TO INSTALL ALL NEW PIPING.

F. PROVIDE TRAP PRIMERS (TP1) ON ALL FLOOR DRAINS.

LEGEND – PLUMBING – NOT ALL ARE USED.

CWS — COMBINATION FIRE AND DOMESTIC WATER SERVICE	COMBINATION BALANCE/ SHUT-OFF VALVE
WS — DOMESTIC WATER SERVICE	GAS SHUT-OFF VALVE
FS — FIRE SERVICE	SHUT-OFF VALVE ON DROP
GS — GAS SERVICE	SHUT-OFF VALVE ON RISER
WTR — WATER MAIN	PRESSURE GAUGE
SAN — SANITARY SEWER	THERMOMETER
STM — STORM SEWER	SPRINKLER PIPE
SANITARY PIPING	FIRE MAIN
V — SANITARY VENT PIPING	SUPERVISED VALVE
GD — GARAGE DRAINAGE PIPING	FLOW SWITCH
GDV — GARAGE DRAINAGE VENT PIPING	GRADE CLEANOUT
INDIRECT WASTE PIPING	FLOOR CLEANOUT
ST — STORM DRAINAGE PIPING	WALL CLEANOUT
CW — (CW) DOMESTIC COLD WATER	FIRE RISER (STAND PIPE / SPRINKLER)
HW — (HW) DOMESTIC HOT WATER = 120 F	SANITARY STACK
HWR — (HWR) DOMESTIC HOT WATER RETURN = 120 F	VENT STACK
OXY — MEDICAL OXYGEN PIPE	VENT RISER
MA — MEDICAL AIR PIPE	VENT THRU ROOF
VAC — MEDICAL VACUUM PIPE	SUPPLY RISER
140 — DOMESTIC HOT WATER – 140°F	DOWNSPOUT
140R — DOMESTIC HOT WATER RETURN – 140°F	ABOVE FINISH FLOOR
NPW — NON-POTABLE COLD WATER	ABOVE FINISH GRADE
TP — TRAP PRIMER SUPPLY	INVERT ELEVATION
G — NATURAL GAS PIPING	WC1 — FIXTURE SYMBOL
PIPE DROP	1 — DRAWING NOTES
PIPE RISER	(1) — DETAIL NOTES
DIRECTION OF PITCH	123 — ROOM NUMBER
DIRECTION OF FLOW	WC1 — TO FIXTURE ABOVE
UNION	CONNECT TO EXISTING
CHECK VALVE	(1s) — SANITARY ISOMETRIC DESIGNATION
SHUT-OFF VALVE	



1 FLOOR DRAIN DETAIL (FD1)

SCALE: NONE

3023.00

ISSUED FOR BIDDING	01-31-2013
Revisions	Date

CONTECH DESIGN, INCORPORATED
Consulting Professional Engineers
519 Windsor Park Dr., Centerville, Ohio 45459
Phone: (937)435-3722 Fax: (937) 435-4685
Email: engineers@contechdesign.com Engineer Project # 12014

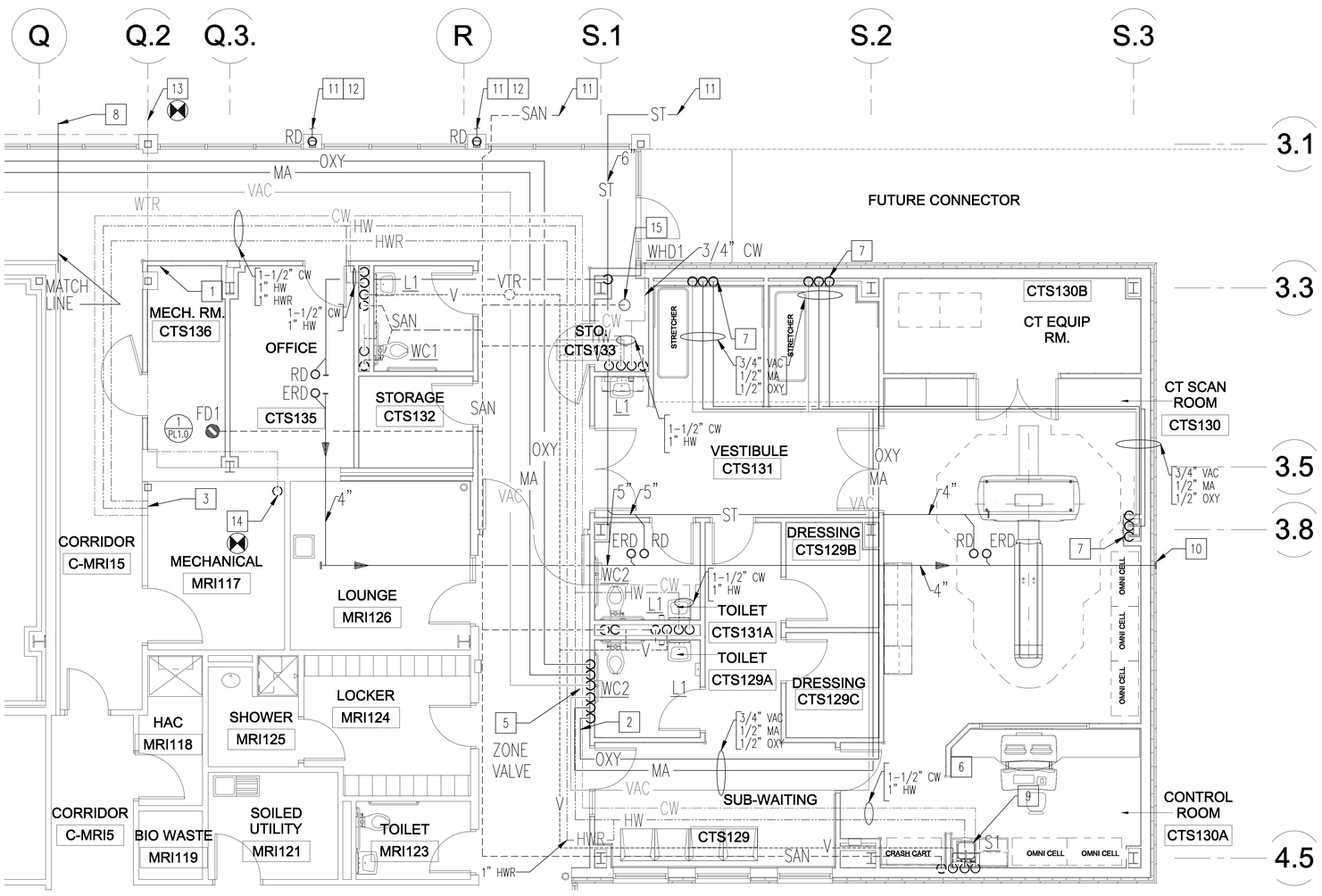
STATE OF OHIO — PARMA NAND SINHA 42622 — REGISTERED PROFESSIONAL ENGINEER

Revised By:

Drawing Title	Project Title	Date
PLUMBING SCHEDULES AND DETAILS	SITE PREP FOR CT SCANNER	01-31-2013
Approved: Project Manager: RANDI FIORINA	Building Number: 335 / Checked: PNS / Drawn: CONTECH	Project No.: 552-CSI-333
Approved: Service Chief: GARY ABREU	Location: 4100 WEST THIRD STREET DAYTON, OH 45428	Drawing No.: PL 1.0

VAMC, DAYTON — VA Department of Veterans Affairs

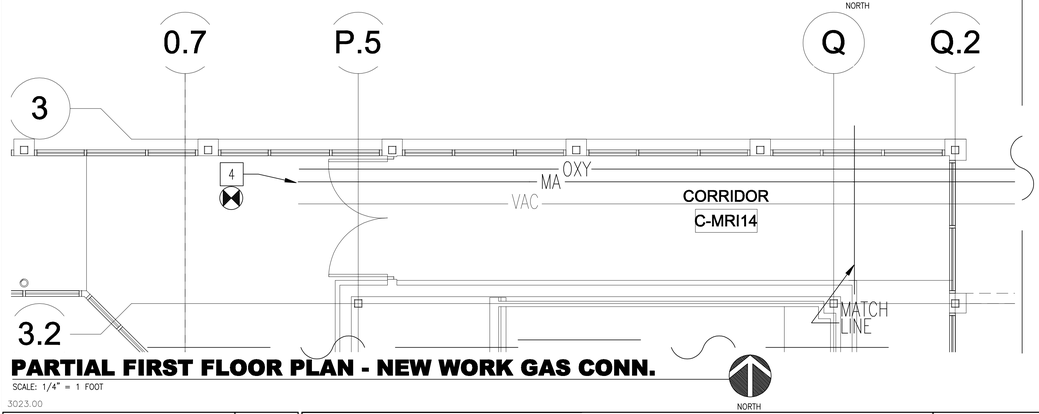
VA FORM 08-6231, OCT 1978



FIRST FLOOR PLAN - NEW WORK

SCALE: 1/4" = 1 FOOT

NORTH



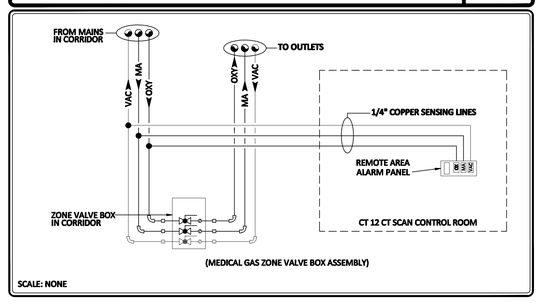
PARTIAL FIRST FLOOR PLAN - NEW WORK GAS CONN.

SCALE: 1/4" = 1 FOOT

NORTH

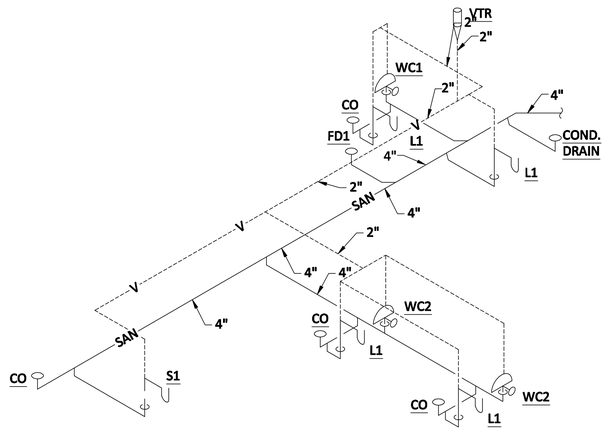
3023.00

ZONE VALVE / ZONE ALARM PANEL — 1



(MEDICAL GAS ZONE VALVE BOX ASSEMBLY)

SCALE: NONE



NORTH

PLUMBING ISOMETRIC

SCALE: NONE

PLUMBING DRAWING NOTES

1. DEMOLISH EXISTING BUILDING 335 DOWNSPOUT AND WALL HYDRANT IN THIS LOCATION. CONTRACTOR TO FIELD VERIFY EXACT LOCATION.
2. COORDINATE PIPING LOCATION WITH SOFFIT. SEE ARCHITECTURAL PLANS.
3. CONNECT TO EXISTING BUILDING DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND HOT WATER RETURN THIS LOCATION.
4. CONNECT TO EXISTING BUILDING OXYGEN, MEDICAL AIR, AND VACUUM THIS LOCATION. SEE CONTINUATION ON OVERALL FLOOR PLAN. CONTRACTOR SHALL FIELD VERIFY EXACT CONNECTION POINT TO EXISTING BUILDING UTILITIES.
5. PROVIDE ZONE VALVE BOX PER SPECIFICATION SECTION 22 63 00. SEE ZONE VALVE DETAIL THIS SHEET.
6. INSTALL ZONE VALVE REMOTE AREA ALARM PANEL AT THIS LOCATION.
7. OXYGEN, MEDICAL AIR, AND VACUUM OUTLET BOX. SEE SPECIFICATION SECTIONS 22 62 00 AND 22 63 00. ALL MEDICAL GAS WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 99, INCLUDING CERTIFICATION BY AN INDEPENDENT INSPECTION FIRM.
8. SEE ENLARGED PARTIAL FLOOR PLAN THIS SHEET FOR ADDITIONAL GAS PIPE ROUTING INFORMATION.
9. SINK S1 SHALL BE UNDERCOUNTER-MOUNTED MODEL INSTALLED WITH SOLID SURFACE COUNTERTOP.
10. TERMINATE EMERGENCY ROOF DRAIN LINES WITH OVERFLOW SCUPPER INTEGRATED INTO WALL SURFACE.
11. REFER TO CIVIL SHEET GS 3.0 FOR CONTINUATION AND GRADING.
12. 2" DOWNSPOUT IN ARCHITECTURAL ENCLOSURE. CONNECT INDIVIDUALLY TO STORM SEWER. PROVIDE SLEEVE AT PENETRATION OF STRUCTURE BELOW GRADE.
13. CONNECTION TO RELOCATED 3" WATER MAIN. SEE SHEET GS 4.0 FOR CONTINUATION.
14. CONNECT NEW WATER MAIN TO EXISTING MRI BUILDING 335 TEE-CONNECTION FOR BACKFLOW PREVENTER AND BYPASS LEG, ROOM MRI-117.
15. DRAIN IN THIS ROOM SHALL BE CONNECTED TO HVAC CONDENSATE DRAIN PIPING. SEE SHEET MH 2.1.

Revisions	Date
ISSUED FOR BIDDING	01-31-2013

CONTECH DESIGN, INCORPORATED
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Email: engineers@contechdesign.com Engineer Project # 12014

STATE OF OHIO — PARMA NAND SINHA 42622 — REGISTERED PROFESSIONAL ENGINEER

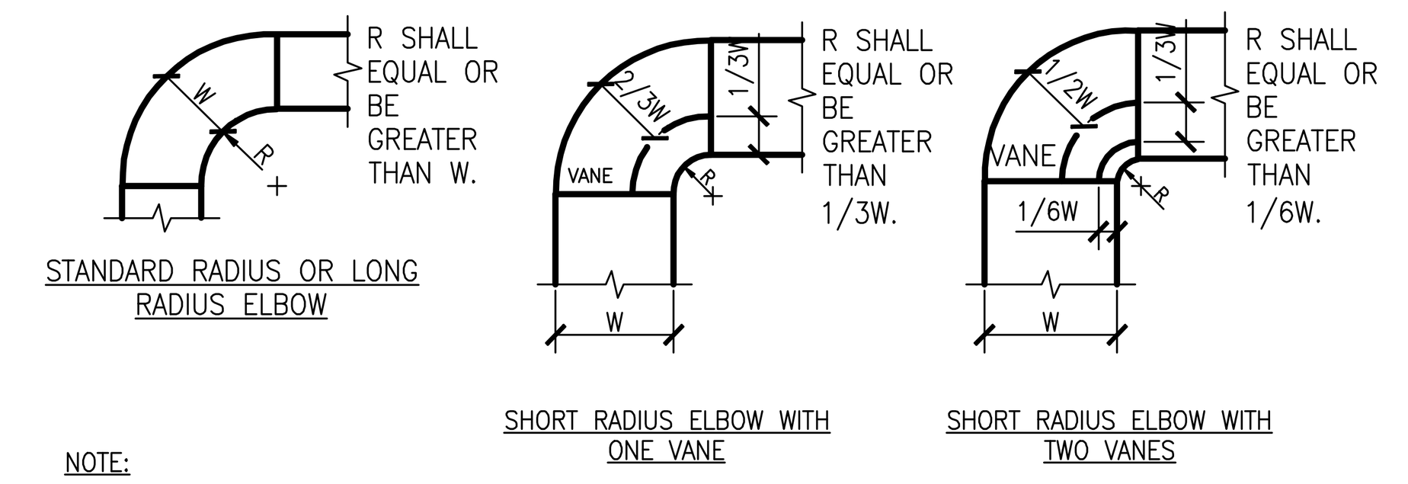
Revised By:

Drawing Title	PLUMBING NEW WORK FLOOR PLANS
Project Title	SITE PREP FOR CT SCANNER
Date	01-31-2013
Project No.	552-CSI-333
Approved: Project Manager	RANDI FIORINA
Building Number	335
Checked	PNS
Drawn	CONTECH
Drawing No.	PL 2.0
Approved: Service Chief	GARY ABREU
Location	4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

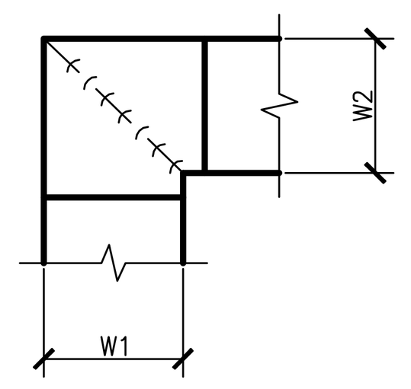


NOTE:

1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

1 DUCTWORK RADIUS ELBOWS

SCALE: NONE

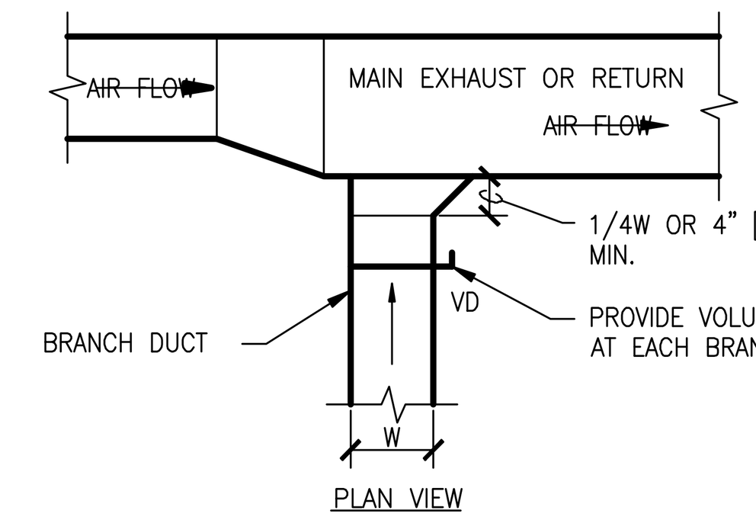


NOTE:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.

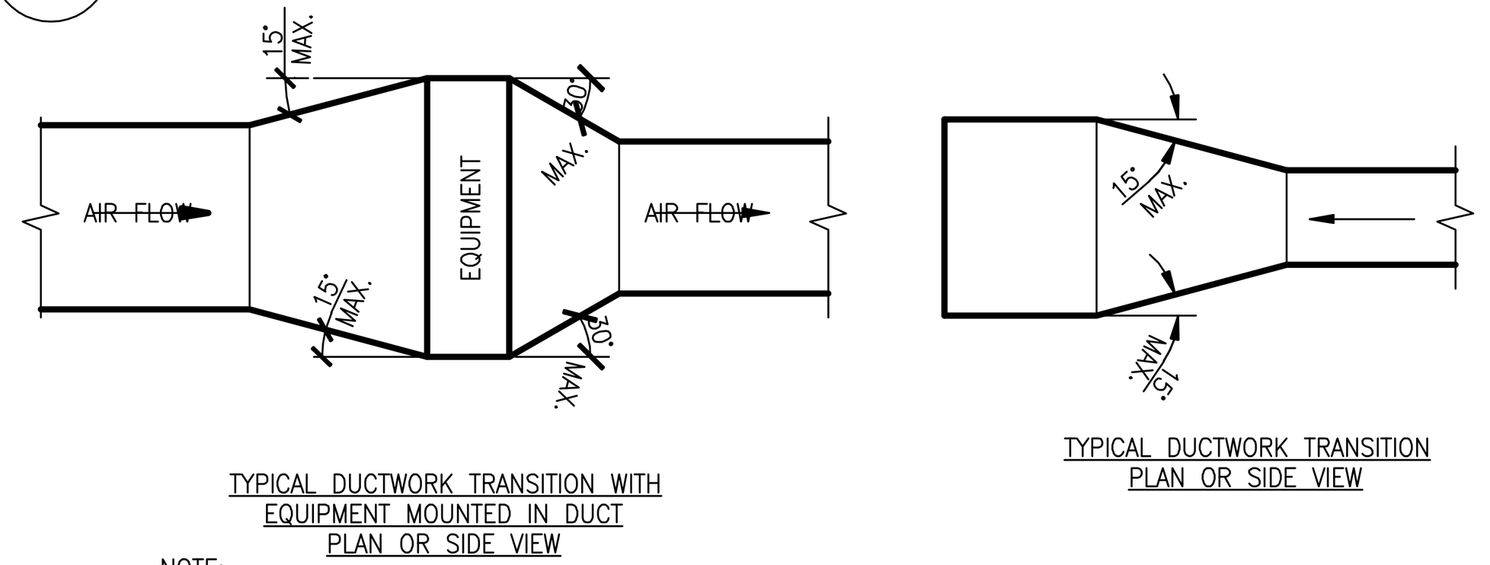
2 DUCTWORK SQUARE VANE ELBOWS

SCALE: NONE



3 EXHAUST OR RETURN BRANCH DUCTWORK

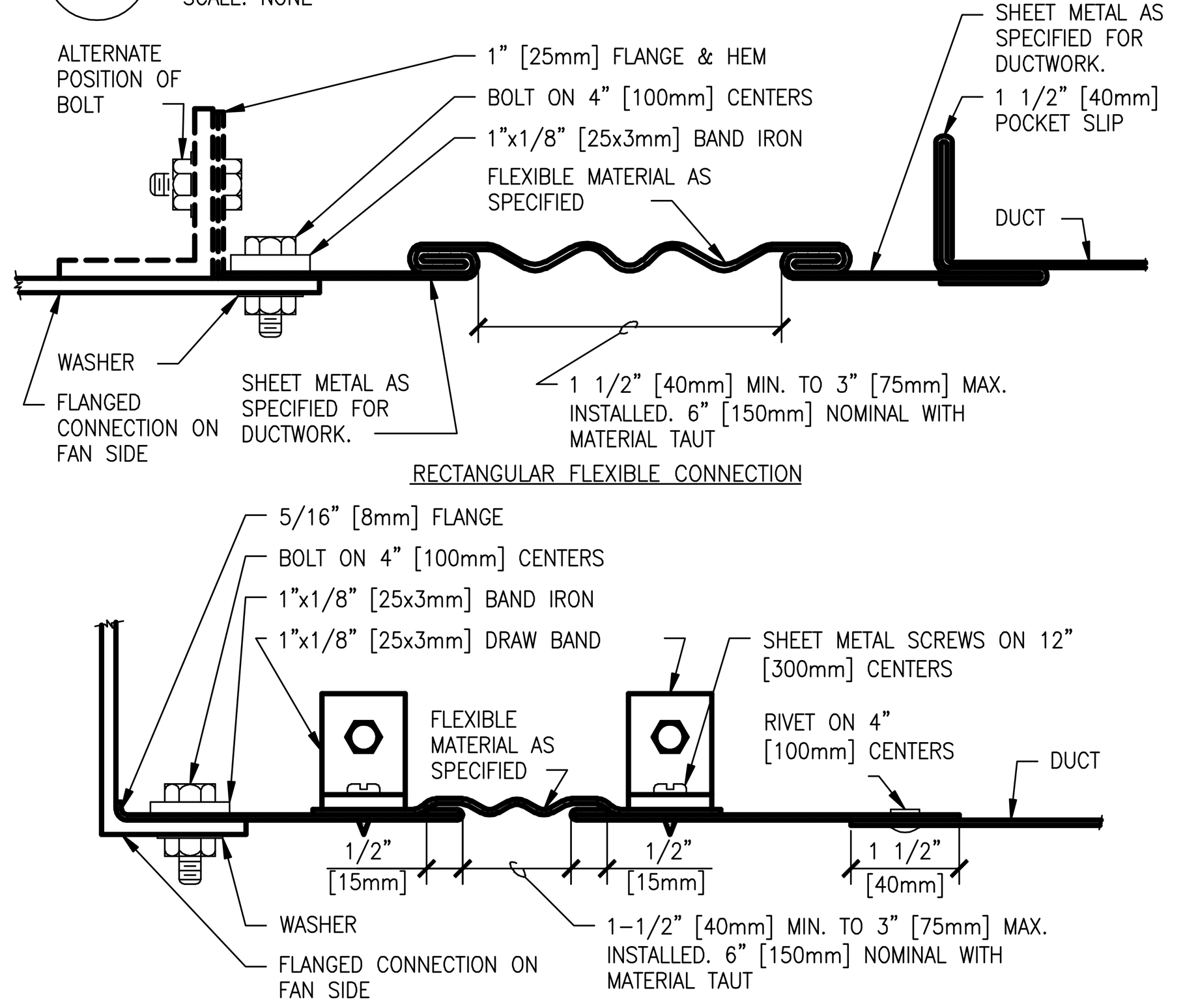
SCALE: NONE



NOTE:
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

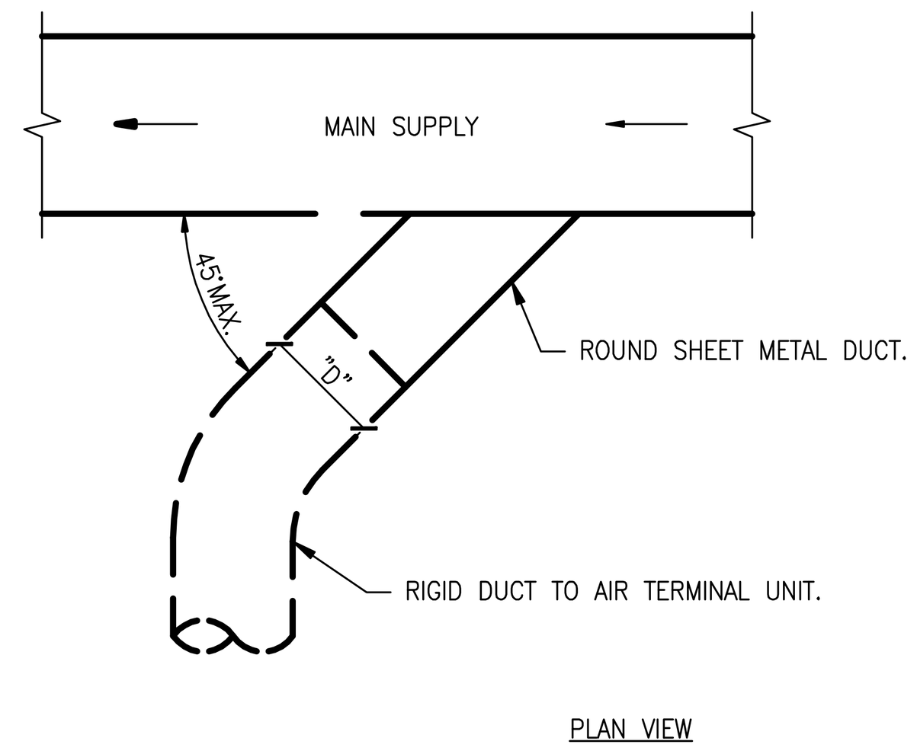
4 DUCTWORK TRANSITIONS (WITH EQUIPMENT MOUNTED IN DUCT)

SCALE: NONE



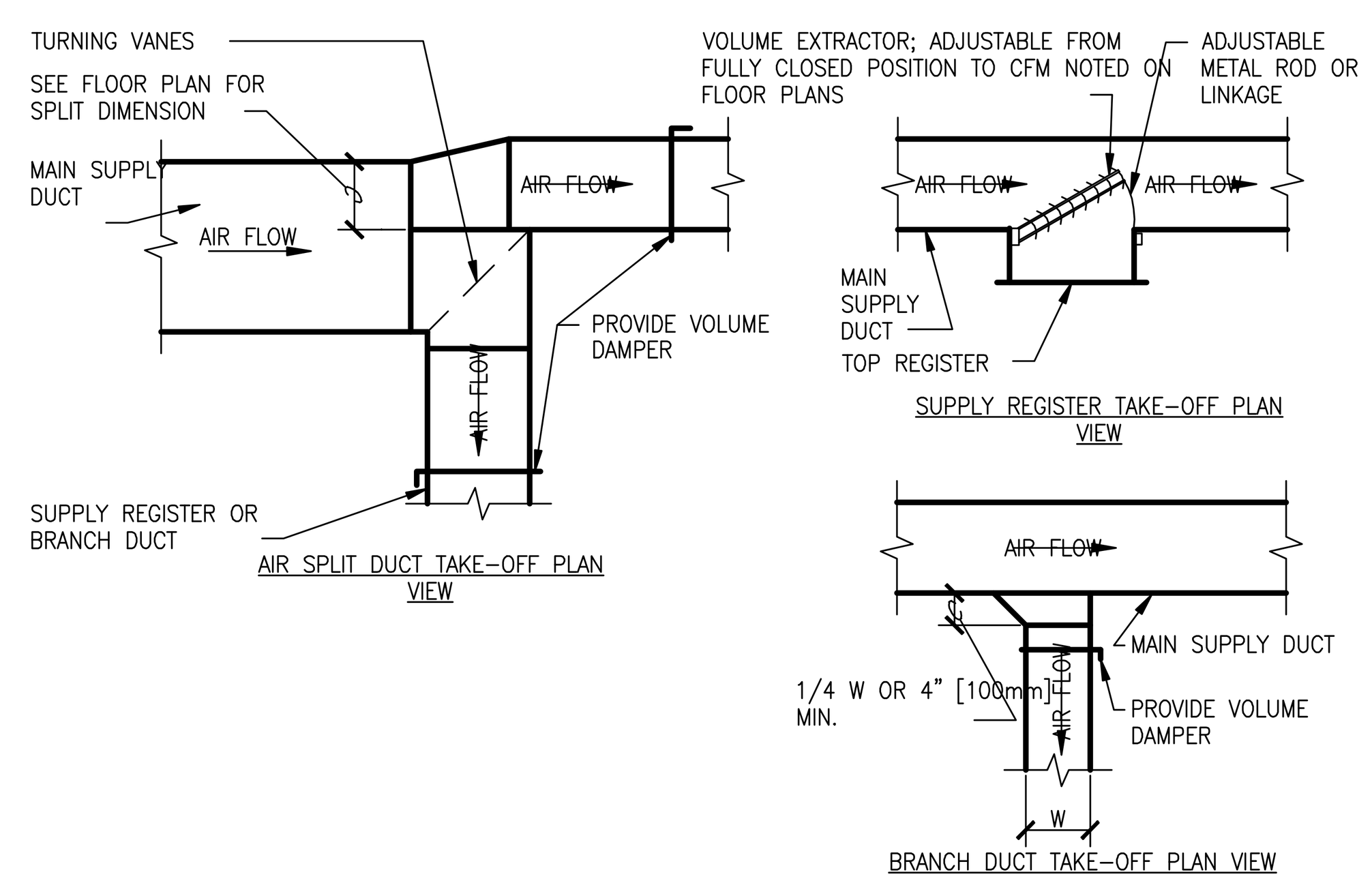
5 FLEXIBLE DUCT CONNECTIONS

SCALE: NONE



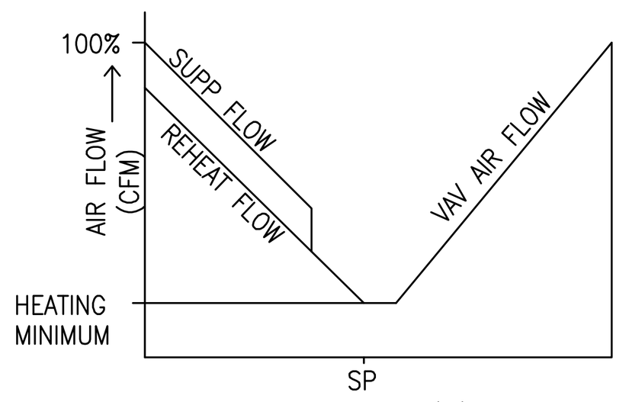
6 SUPPLY DUCT TAKEOFF AIR TERMINAL UNIT

SCALE: NONE



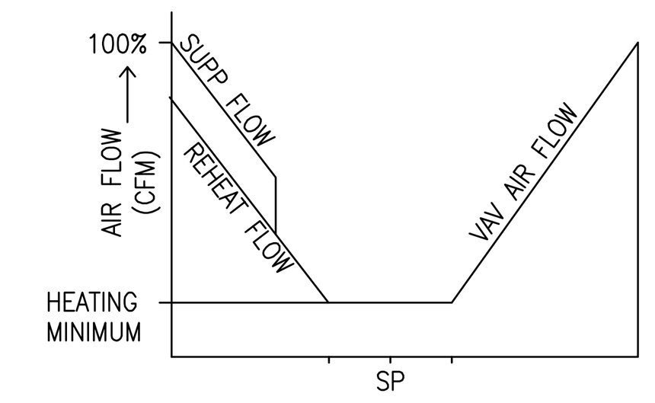
7 SUPPLY DUCTWORK TAKE-OFFS

SCALE: NONE



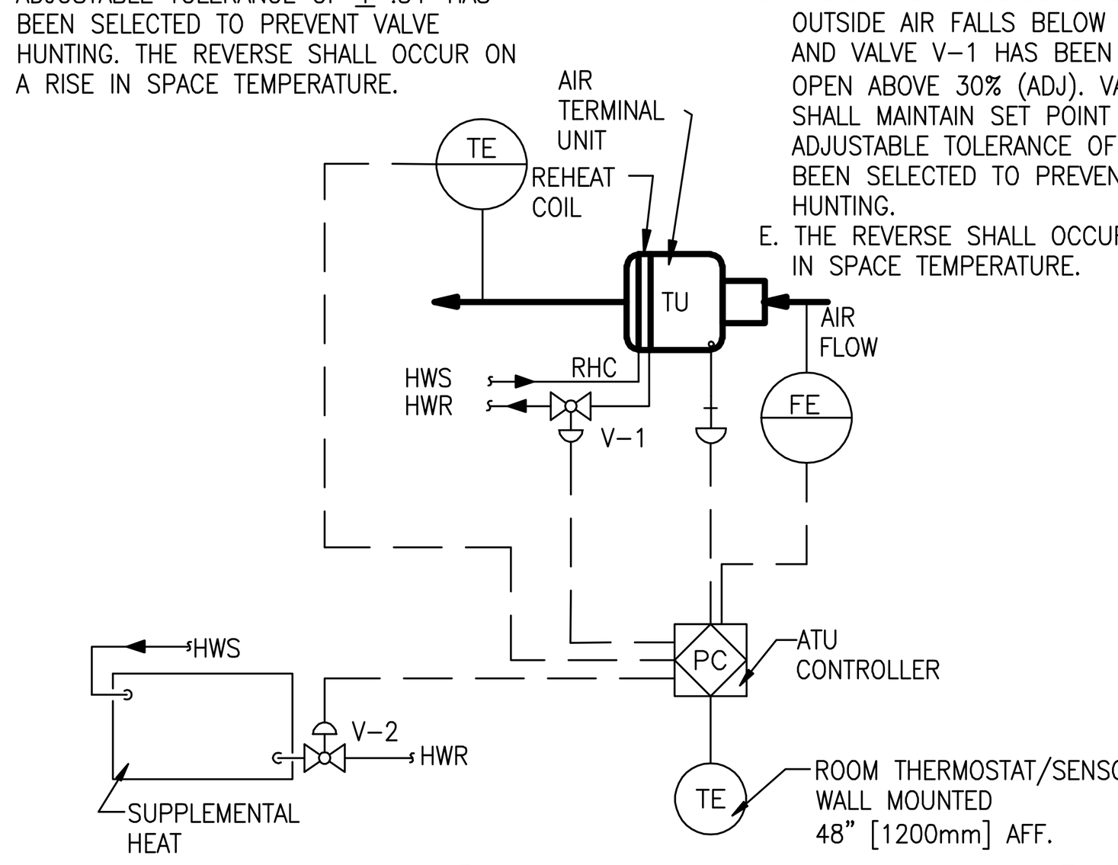
VAV BOX CONTROL SEQUENCE
NO DEADBAND

A. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.
B. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5° F. THE ADJUSTABLE TOLERANCE OF ± .5° F HAS BEEN SELECTED TO PREVENT VALVE HUNTING
C. VALVE V-2 SHALL BE ENABLED WHEN OUTSIDE AIR FALLS BELOW 40° F (ADJ) AND VALVE V-1 HAS BEEN MODULATED OPEN ABOVE 30% (ADJ). VALVE V-2 SHALL MAINTAIN SET POINT ± .5° F. THE ADJUSTABLE TOLERANCE OF ± .5°F HAS BEEN SELECTED TO PREVENT VALVE HUNTING. THE REVERSE SHALL OCCUR ON A RISE IN SPACE TEMPERATURE.



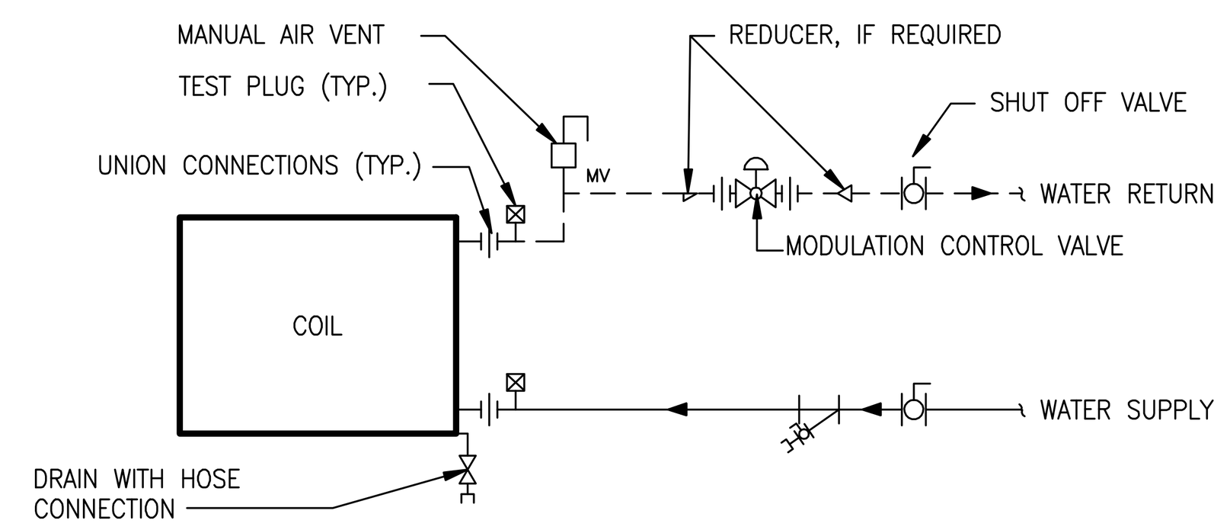
VAV BOX CONTROL SEQUENCE
W/DEADBAND

A. SET POINTS SHALL BE SET AS FOLLOWS:
COOLING 75°F (ADJ)
HEATING 70°F(ADJ)
DEADBAND OF 5° F BETWEEN HEATING AND COOLING SET POINTS WILL BE MAINTAINED.
B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER WILL MODULATE TO MINIMUM POSITION.
C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT ± .5° F. THE ADJUSTABLE TOLERANCE OF ± .5° F HAS BEEN SELECTED TO PREVENT VALVE HUNTING
D. VALVE V-2 SHALL BE ENABLED WHEN OUTSIDE AIR FALLS BELOW 40° F (ADJ) AND VALVE V-1 HAS BEEN MODULATED OPEN ABOVE 30% (ADJ). VALVE V-2 SHALL MAINTAIN SET POINT ± .5° F. THE ADJUSTABLE TOLERANCE OF ± .5°F HAS BEEN SELECTED TO PREVENT VALVE HUNTING.
E. THE REVERSE SHALL OCCUR ON THE RISE IN SPACE TEMPERATURE.



8 WITH SUPPLEMENTAL HEATING VARIABLE VOLUME AIR TERMINAL UNIT CONTROL DIAGRAM

SCALE: NONE



9 TERMINAL UNIT WATER COILS - PIPING CONNECTIONS

SCALE: NONE

CONDENSING UNIT SCHEDULE

GENERAL NOTES:

- COOLING CAPACITY BASED ON INDOOR 80 DB / 67 WB AND ENTERING AIR & 95 DB OUTSIDE AMBIENT.
- HEATING CAPACITY BASED ON INDOOR 70 DB AND ENTERING AIR OF 0 DB / 0 WB
- REFRIGERANT LINE SIZES FOR LIQUID, DISCHARGE, SUCTION, AND BAL. TUBE SHALL BE SIZED BY MANUFACTURER.
- DISCONNECT BY ELECTRICAL CONTRACTOR
- REFRIGERANT SHALL BE R-410A

MARK	SERVICE	MOUNTING	TERMINAL UNITS SERVED	CFM	HEATING		COOLING (MBH)		ELEC. SERVICE		NUMBER OF CIRCUITS	NOTES
					MBH	AMPS	SENS.	TOTAL	MCA	VOLT/PH/MOCP		
CU-1	CT SCAN SUITE	ROOFTOP	FC-1	N/A	16.2	--	14.4	14.4	72.2	208/3/80	1	1,2,4,6,7
CU-2	CT SCAN SUITE	ROOFTOP	FC-1	N/A	16.2	--	14.4	14.4	72.2	208/3/80	1	1,2,4,6,7
CU-3	NORTHWEST AND SOUTHEAST	ROOFTOP	FC-2, FC-3, FC-4, FC-5	N/A	16.2	--	14.4	14.4	72.2	208/3/80	1	1,3,5

NOTES:

1. MOUNT COMPRESSOR ON RUBBER-IN-SHEAR ISOLATORS
2. UNIT IS A HEAT RECOVERY CONDENSING UNIT WITH INVERTER. HEATING OPERATION TO 0 DEGREES F. VFD CONTROLLED OUTDOOR FAN MOTOR, CONTINUOUS HEATING DURING DEFROST, MANIFOLDING KIT
3. SINGLE POINT POWER CONNECTION.
4. CONDENSING UNIT IS A COMBINATION OF TWO (2) CONDENSING UNITS. EACH INDIVIDUAL CONDENSING UNIT REQUIRES AN ELECTRICAL FEED, WIRE PER MFG. INSTRUCTION.
5. INSTALL UNIT ON VIBRATION ISOLATION PADS, MINIMUM 1/4" DEFLECTION, FURNISHED BY UNIT MFG.
6. CONDENSING UNIT SIZING BASED ON UNITS ABILITY TO PROVIDE 120% OF MAXIMUM CONNECTED LOAD. MFG. TO ADJUST SIZING BASED ON DIFFERENT UNIT PERFORMANCE.
7. CONNECT TO EMERGENCY POWER SYSTEM.

FAN SCHEDULE

FAN TYPE

1. IN-LINE
2. POWER ROOF VENTILATOR
3. CEILING EXHAUSTER
4. WALL PROPELLER
5. UP-BLAST ROOF EXHAUSTER
6. UTILITY SET
7. CENTRIFUGAL
8. BACKWARD INCLINED
9. FORWARD CURVED
10. GRAVITY ROOF VENTILATOR
11. ENERGY RECOVERY VENTILATOR

MISCELLANEOUS

1. GRAVITY BACKDRAFT DAMPER
2. MOTORIZED BACKDRAFT DAMPER INTERLOCKED WITH ENERGY RECOVERY VENT. INDICATED - WIRING BY M.C.
3. 85% BIRDSCREEN - GALVANIZED
4. 14" INSULATED ROOF CURB - VERIFY ROOF CONSTR.
5. HOUSING INSULATED KIT
6. HANGING VIBRATION ISOLOATORS
7. BASE VIBRATION ISOLATORS
8. BELT AND/OR MOTOR GUARD
9. INTEGRAL DISCONNECT SWITCH
10. 2-SPEED MOTOR AND SWITCH
11. FAN SPEED CONTROLER
12. WALL MTD. SWITCH WITH PILOT LIGHT
13. INTERLOCK WITH LIGHT SWITCH - WIRING BY E.C.
14. ALUMINUM CONSTRUCTION, ENAMEL FINISH

MARK	QTY REQ'D	FAN TYPE	DUTY OR SERVICE	CFM	S.P. W.G.	RPM	MOTOR			DRIVE	BUILDING OPENING	MFR.	MODEL	SERVING AREA/ EQUIPMENT	MISC.	NOTES
							HP	VOLT	PHASE							
EF-1	1	2	EXHAUST	1,200	0.50	1725	1/3	120	1	DIRECT	---	--	--	CT SCAN ROOM	1,4,9,12	
IH-1	1	10	INTAKE	1,100	--	--	--	--	--	--	12" INS.	--	--	--	2,3,14	

VARIABLE REFRIGERANT VOLUME TERMINAL UNIT SCHEDULE

UNIT TAG	TYPE	SERVED BY	TEMP SENS. AND UNIT CONTROLS	AIR FLOW (CFM)			COIL(S) INFORMATION						NOTES
				MAXIMUM	MINIMUM COOLING	MINIMUM HEATING	CAPACITY COOLING (MBH)	CAPACITY HEATING (MBH)	E.S.P.	REFRIG. LIQUID SIZE	REFRIG. GAS SIZE	ELECTRICAL WATTAGE/ MOCP	
FC-1	CLG. MTD. DUCTED	CU-1	BY MFG.	2,040	1,730	1,467	48	54	0.6	3/8	5/8	350/15	1,2,3,4,5,6
FC-2	CLG. MTD. DUCTED	CU-2	BY MFG.	350	330	310	12	13.5	0.6	1/4	1/2	84/15	1,2,3,4,5,6
FC-3	CLG. MTD. DUCTED	CU-2	BY MFG.	688	618	565	24	27	0.6	1/4	1/2	350/15	1,2,3,4,5,6
FC-4	CLG. MTD. DUCTED	CU-2	BY MFG.	688	618	565	24	27	0.6	1/4	1/2	350/15	1,2,3,4,5,6
FC-5	CLG. MTD. DUCTED	CU-3	BY MFG.	688	618	565	24	27	0.6	1/4	1/2	350/15	1,2,3,4,5,6

NOTES:

1. DIRECT-EXPANSION COIL PKG. W/FACTORY MTD. THERMAL EXPANSION VALVE AND EQUALIZING TUBE
2. R-I-S VIBRATION ISOLATORS
3. PROVIDE ONE (1) SOLENOID VALVE KIT PER DIRECT EXPANSION TERMINAL UNIT
4. UNIT SHALL BE UL-LISTED
5. PROVIDE FACTORY MOUNTED CONDENSATE PUMP ASSEMBLY
6. WASHABLE FILTER KIT

ELECTRIC HEATING UNIT SCHEDULE

GENERAL NOTES:

- VERIFY/COORDINATE CABINET DIMENSIONS, MOUNTING AND RECESS REQUIREMENTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ORDERING.
- LINTELS FOR FULL & SEMI-RECESSED UNIT WALL OPENING PROVIDED BY GENERAL CONTRACTOR.
- RECESSED UNITS TO HAVE FOUR(4) SIDE OVERLAP UNLESS OTHERWISE NOTED.
- CABINET COLOR SHALL BE SELECTED BY THE ARCHITECT FROM MFR STANDARD COLOR CHART.
- REFER TO SPECIFICATIONS FOR APPROVED EQUALS.
- UNIT SHALL BE PROVIDED WITH INTERNAL DISCONNECT SWITCH AND/OR INTEGRAL OVERCURRENT PROTECTION AS REQUIRED BY CODE.
- THREE (3) PHASE COIL LOADS SHALL BE DIVIDED EVENLY ACROSS EACH PHASE.
- ELECTRIC SERVICE TO THREE (3) PHASE UNITS TO BE THREE (3) WIRE UNLESS OTHERWISE NOTED.
- MOUNTING HEIGHT SHALL BE IN ACCORDANCE WITH THE MFR'S RECOMMENDATIONS AND VERIFIED WITH THE ARCHITECT.

MARK	QTY REQ'D	DESCRIPTION	MOUNTING	AREA SERVED	CFM	HEATING			ELEC. SERVICE		FAN MOTOR		APPROX. CABINET DIM.			NOTES
						BTUHR	KW(MIN.)	KW(MAX.)	AMP	VOLT/PH	RPM	HP	LENGTH	DEPTH	HEIGHT	
EWH-1	1	ELEC. FAN FORCED HEATER	SURFACE	MECHANICAL ROOM	100	5110	1.5	1.5	12.5	208/1	---	---	14 3/16"	4"	19 3/16"	1

NOTES:

1. SURFACE MOUNTED FRAME, UNIT MOUNTED 120-VOLT THERMOSTAT, WITH THERMAL CUT-OUT.

AIR DEVICE SCHEDULE

TYPE

1. CEILING DIFFUSER
2. PERFORATED CEILING DIFFUSER
3. LINEAR BAR DIFFUSER
4. LOUVERED GRILLE / REGISTER
5. STEEL
6. ALUMINUM
7. (1) - 1" LINEAR SLOT DIFFUSER
8. EGGCRATE
9. BAR GRILLE
10. LINEAR BAR GRILLE - SUPPLY
11. LINEAR BAR GRILLE - RETURN
12. DOUBLE DEFL. SUPPLY REG.
13. ALUMINUM EGG CRATE
14. GYM GRILLE
15. ADJUSTABLE SLOT DIFFUSER
16. ALUMINUM CONTROL DAMPER
17. SIDEWALL LINEAR

FINISH

1. OFF-WHITE BAKED ENAMEL
2. ETCHED CLEAR LACQUERED
3. ANODIZED
4. ANODIZED ALUMINUM.
5. SEE ARCHITECT

MISCELLANEOUS

1. VOLUME DAMPER
2. OPPOSED BLADE DAMPER
3. DAMPER ACCESS FROM FACE
4. FIRE DAMPER
5. COMBINATION DAMPER (FIRE/VOLUME)
6. BLACK INTERNALS
7. FILTERED RETURN
8. BACKDRAFT DAMPER
9. DIFFUSER-SIZED PLENUM ATTACHED

GENERAL NOTES

- REFER TO SPECIFICATIONS FOR APPROVED MANUFACTURERS.
- SUPPLY AIR DIFFUSERS SHALL BE 4-WAY BLOW UNLESS OTHERWISE NOTED ON DRAWINGS.
- M.C. TO VERIFY CEILING/WALL/FLOOR TYPE BEFORE ORDERING DEVICE.
- APPROX. HEIGHT TO BOTTOM - FIELD VERIFY & COORDINATE WITH ARCHITECT.

MARK ⬡	DESCRIPTION	MODULE SIZE	DUTY	CFM	TYPE	FINISH	MODEL NUMBER	MFR	CLG./MTG. HT.	MISC	NOTES
S1	SQUARE	12" X 12"	SUPPLY	VARIES	1,5	1	N/A	N/A	CEILING	1,6	
S2	SQUARE	24" X 24"	SUPPLY	VARIES	1,5	1	N/A	N/A	CEILING	1,6	
S3	LINEAR	1" X 48" (1)	SUPPLY	VARIES	6,7	2	N/A	N/A	CEILING	1,9	
S4	LINEAR	1" X 24" (1)	SUPPLY	VARIES	6,7	2	N/A	N/A	SOFFIT/SIDEWALL	1	
R1	SQUARE	24" X 24"	RETURN	VARIES	6,8	1	N/A	N/A	CEILING	1,7	
R2	SQUARE	12" X 12"	RETURN	VARIES	6,8	1	N/A	N/A	CEILING	1,7	
E1	SQUARE	12" X 12"	EXHAUST	VARIES	6,8	1	N/A	N/A	CEILING	--	
"S"	EXISTING	3" X 48"	SUPPLY	159	3,6,17	2	N/A	N/A	SIDEWALL	2	1,2
"R"	EXISTING	12" X 24"	RETURN	317	6,8	1	N/A	N/A	CEILING	2	1,2

NOTES:

1. REUSE EXISTING DEVICES SALVAGED FROM DEMOLITION.
2. REPLACE WITH IDENTICAL TO EXISTING IF NOT SALVAGED.

MECHANICAL LEGEND

DUCTWORK SYMBOLS

———	LOW VELOCITY DUCTWORK
—SA—	SUPPLY AIR DUCTWORK
—RA—	RETURN AIR DUCTWORK
—EA—	EXHAUST AIR DUCTWORK
—FA—	FRESH AIR DUCTWORK
	SUPPLY AIR DEVICE W/ FLEX DUCT
	RETURN OR EXHAUST AIR DEVICE
	FLEXIBLE DUCTWORK (MAX. 7 FT.)
	ACOUSTICALLY LINED DUCTWORK
	FLEXIBLE DUCT CONNECTION
(FD)	FIRE DAMPER
(SD)	SMOKE DAMPER
(BD)	BALANCE DAMPER
	TURNING VANES
L	MANUAL DAMPER
→	SUPPLY AIR
	RETURN OR EXHAUST AIR
FC-#	VRV TERMINAL UNIT #

MISCELLANEOUS

T	THERMOSTAT - ELECTRIC
TA	THERMOSTAT - ELECTRIC, AVERGING
Ⓣ	THERMOSTAT - PNEUMATIC
Ⓢ	ROOM SENSOR
Ⓗ	HUMIDISTAT
TR	TIMER
(H1)	EQUIPMENT SYMBOL
	NOTE SYMBOL
⟨1⟩	AIR DEVICE SYMBOL
123	ROOM NUMBER
	NEW CONNECTION TO EXISTING
U/C	UNDERCUT DOOR 1/2" BY G.C.
U/C-3/4	UNDERCUT DOOR 3/4" BY G.C.
DL-1	DOOR LOUVER - NUMBER INDICATES SQUARE FT. OPNG BY G.C.
AFF	ABOVE FINISHED FLOOR
DIA	DIAMETER
ETR	EXISTING TO REMAIN
E.C.	ELECTRICAL CONTRACTOR
ER	EXISTING TO BE RELOCATED
EF	EXHAUST FAN
ECH	ELECTRIC CABINET HEATER
EUH	ELECTRIC UNIT HEATER
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
RCP	ELECTRIC RADIANT CEILING PANEL
WH	WATER HEATER (BY OTHERS)

GENERAL NOTES - MECHANICAL

A. MECHANICAL CONTRACTOR SHALL ABIDE BY ALL LOCAL AND/OR STATE CODES AUTHORITY GUIDELINES, SAFETY RULES AND THE VA DESIGN GUIDELINES/ DESIGN MANUALS/ BUILDING STANDARDS.

B. MECHANICAL CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS OF ALL TRADES PRIOR TO BID. THE MECHANICAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL MECHANICAL WORK MENTIONED IN OTHER TRADE'S SPECIFICATIONS AND DRAWINGS.

C. INSULATED FLEXIBLE DUCT RUN-OUTS TO AIR DEVICES WILL NOT EXCEED 6'-0".

D. CONTRACTOR TO VERIFY ALL CEILING/WALL/FLOOR TYPES BEFORE ORDERING AIR DEVICES WITH ARCHITECTURAL PLANS AND COORDINATE LOCATION WITH ARCHITECTURAL AND ELECTRICAL REFLECTED CEILING PLANS.

E. ALL DUCTWORK AND PIPING TO BE RUN ABOVE THE CEILING OR IN THE ATTIC SPACE UNLESS NOTED OTHERWISE.

F. ALL DUCTWORK RUN IN ATTIC SPACE TO HAVE A MINIMUM OF 2" WRAPPED INSULATION. INSULATE THE BACK OF ALL AIR DEVICES TO AVOID CONDENSATION.

G. MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION OF ALL PIPES, DUCTWORK, UNITS, ETC. WITH ALL OTHER TRADES AND EXISTING STRUCTURE. SHIFT LOCATION OR OFF-SET DUCT WHERE NECESSARY.

H. THE LOCATION AND SIZES OF ALL EXISTING PIPING, DUCTWORK, AIR DEVICES, ETC. HAS BEEN DETERMINED FROM EXISTING SITE CONDITIONS AND SHOULD BE CONSIDERED IN ITS APPROXIMATE LOCATION. THE CONTRACTOR SHALL FIELD VERIFY, BEFORE STARTING ANY INSTALLATION OR DEMOLITION, THE EXACT SIZE AND LOCATION OF ALL EXISTING PIPING AND DUCTWORK AT THE POINTS OF CONNECTION AND THAT THERE IS ADEQUATE SPACE TO INSTALL ALL NEW WORK. PROVIDE COORDINATION DRAWINGS AS SPECIFIED IN THE SPECIFICATIONS.

I. THE DRAWINGS AND SPECIFICATIONS ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RELOCATED. IT IS IMPERATIVE THAT THE CONTRACTOR VISIT THE SITE AND VERIFY ALL QUANTITIES AND EXTENT OF REMOVALS AND RELOCATIONS PRIOR TO BID. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY TO PROVIDE ALL REMOVALS AND RELOCATIONS REQUIRED. COST EXTRAS WILL NOT BE ALLOWED FOR THIS PORTION OF THE PROJECT.

J. ALL DEMOLITION SHALL BE COORDINATED WITH THE OTHER TRADES INVOLVED, INCLUDING THE ARCHITECT'S AND OWNER'S REPRESENTATIVES.

K. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING ALL REMOVED EQUIPMENT FROM THE SITE UNLESS OTHERWISE DIRECTED. INCLUDE CUTTING AND PATCHING ASSOCIATED WITH REMOVAL WORK.

L. CONTRACTOR TO INSPECT AND THOROUGHLY CLEAN ALL AIR DEVICES, FANS, DUCTWORK, ETC. THAT IS DESIGNATED AS EXISTING OR EXISTING TO REMAIN BEFORE BEGINNING ANY NEW WORK. REPLACE DAMAGED DUCTWORK AND INSULATION TO MATCH EXISTING TYPE.

M. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS AND APPLICABLE CODES AND REGULATIONS.

N. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE VA WITH COORDINATION DRAWINGS OF ALL TRADES INVOLVED IN THE PROJECT.

O. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.

P. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR DUCTWORK, PIPING AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

Q. PROVIDE BALANCING DAMPERS ON ALL RUN-OUTS TO SUPPLY AIR DEVICES.

R. ALL REFRIGERANT PIPING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

S. ALL DEVICES LESS THAN 24" SQUARE SHALL BE PROVIDED WITH CENTERING TRIM PLATES. CENTER IN GRID.

T. PROVIDE FILTER RETURN GRILLES AT ALL RETURN LOCATIONS.

DUCT CONSTRUCTION & SEALING

GENERAL NOTES:

- REFER TO SPECFICATIONS FOR DUCT CONSTRUCTION OPTIONS: SHEET METAL DUCT, INTERIOR LINING, EXTERIOR INSULATION, FIBERGLASS DUCTBOARD, ETC.
- REFER TO SMACNA LOW PRESSURE DUCT STANDARDS FOR DUCT CONSTRUCTION, GAUGE REQUIREMENTS AND JOINT REINFORCEMENT TABLES AND FIGURES.

DUCT SYSTEM	S.M.A.C.N.A. CLASS	
	S.P. CONSTRUCTION	SEAL CLASS
LOW VELOCITY SUPPLY DUCTWORK	+1"	B
RETURN OR RELIEF AIR DUCTWORK	-1"	C
OUTDOOR AIR / FRESH AIR	-0.5"	C
EXHAUST AIR DUCTWORK	-0.5"	C

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Revisions	Date
ISSUED FOR BIDDING	01-31-2013

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STATE OF OHIO
PARMA NAND SINHA 42622
REGISTERED PROFESSIONAL ENGINEER

Revised By:

Drawing Title
MECHANICAL HVAC SCHEDULES AND DETAILS

Approved: Project Manager
RANDI FIORINA

Approved: Service Chief
GARY ABREU

Project Title
SITE PREP FOR CT SCANNER

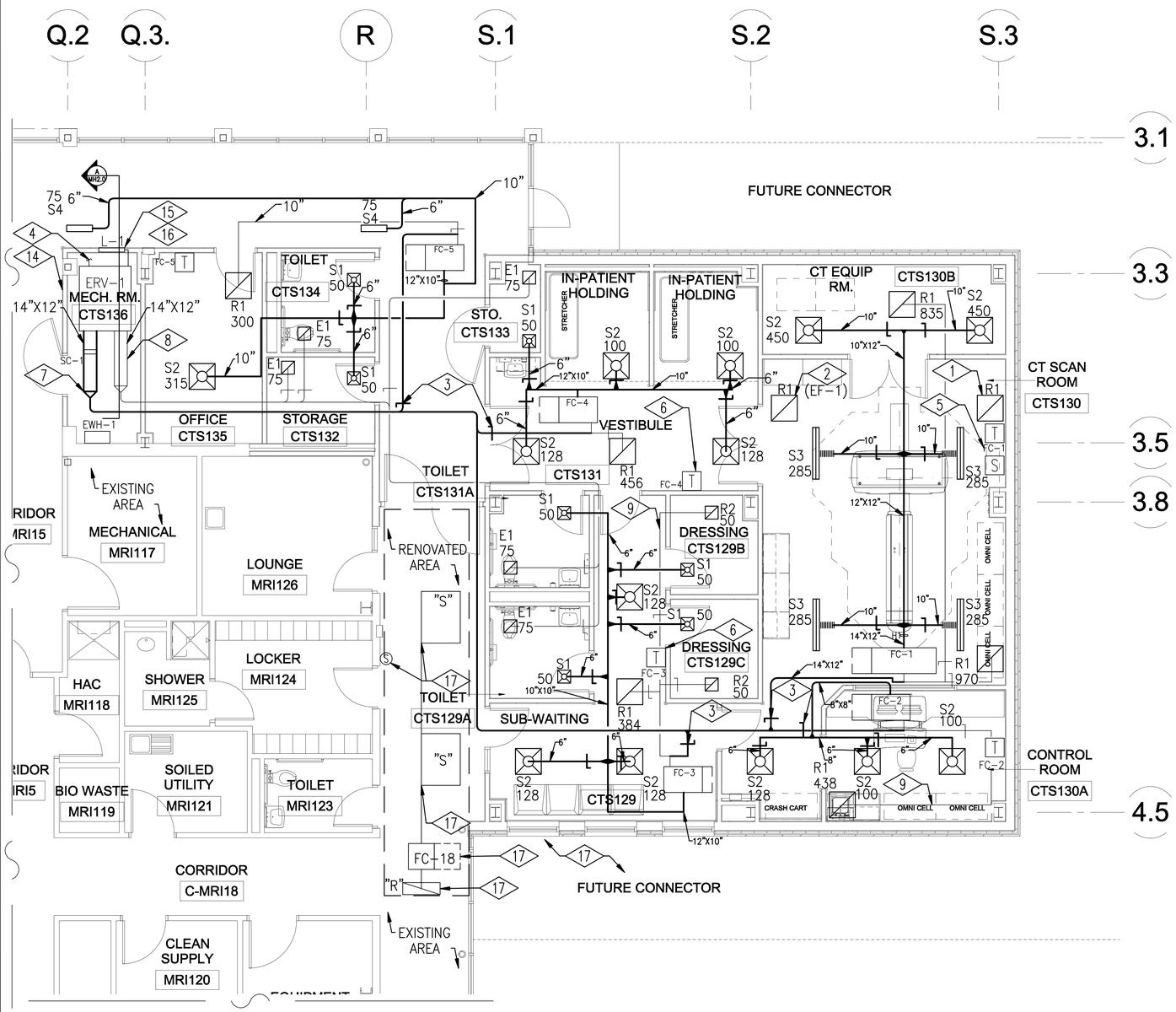
Building Number 335
Checked PNS
Drawn CONTECH

Location 4100 WEST THIRD STREET DAYTON, OH 45428

Date 01-31-2013
Project No. 552-CSI-333
Drawing No. MH 1.0

VAMC, DAYTON

VA Department of Veterans Affairs



FIRST FLOOR PLAN - NEW WORK

SCALE: 1/4" = 1 FOOT

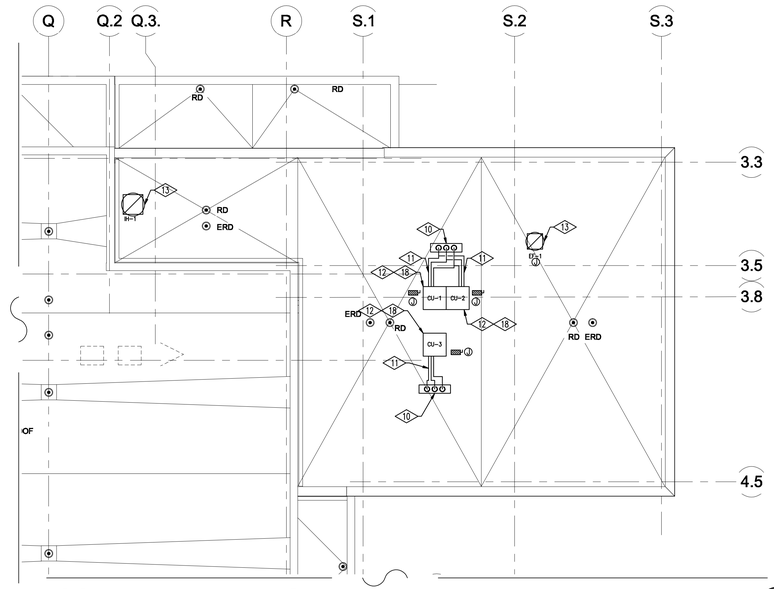
NORTH

DRAWING NOTES – MECHANICAL

1. RELIEF AIR OPENING PROVIDED PER VA STANDARDS.
2. RUN 16" X 16" DUCT UP TO EF-1 MOUNTED ON ROOF.
3. OUTSIDE / OUTDOOR AIR DAMPER. BALANCE TO CFM AS INDICATED ON DRAWINGS.
4. ROUTE 14" X 12" OUTDOOR AIR INTAKE UP TO INTAKE HOOD IH-1 MOUNTED ON ROOF.
5. SENSOR FOR SETPOINT ADJUSTMENT FOR CT SCANNER ROOM. ROOM TEMPERATURE AND HUMIDITY SENSORS MOUNTED IN RETURN AIR DUCTWORK.
6. PROVIDE VANDAL-PROOF COVER.
7. OUTSIDE / OUTDOOR AIR DUCT.
8. EXHAUST DUCT.
9. RETURN DUCT.
10. VARIABLE REFRIGERANT FLOW PIPING DOWN THROUGH ROOF. FURNISH AND INSTALL PIPING CURB. FLASH AND SEAL PER SPECIFICATIONS.
11. ALL PIPING EXPOSED TO WEATHER SHALL BE COVERED AND INSULATED PER SPECIFICATIONS AND COVERED WITH ALUMINUM JACKET MATERIAL.
12. MOUNT CONDENSING UNIT ON ROOF CURB RAILS. FLASH AND SEAL PER SPECIFICATIONS. ELECTRICAL CONNECTIONS BY ELECTRICAL CONTRACTOR – COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION OF ROOF MOUNTED EQUIPMENT. SEE SHEET MH 1.0.

DRAWING NOTES – MECHANICAL (CONTINUED)

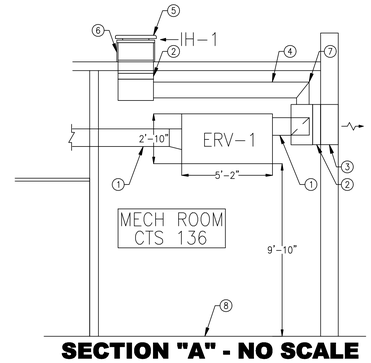
13. MOUNT UNIT ON ROOF CURB. FLASH AND SEAL PER SPECIFICATIONS. ELECTRICAL CONNECTIONS BY ELECTRICAL CONTRACTOR – COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION OF ROOF MOUNTED EQUIPMENT.
14. PROVIDE FIRE DAMPERS ON ALL PENETRATIONS FOR ALL SYSTEMS FROM MECHANICAL ROOM.
15. MOUNT LOUVER L-1 ON SIDEWALL OF HIGH ROOF FACE, NORTH SIDE OF MECHANICAL ROOM.
16. LOUVER L-1: EXHAUST SERVICE, 4" DEEP BY 24" WIDE BY 24" HEIGHT. 1,100 FRM, 0.05" PRESSURE DROP, 2.1 F.A. SQ. FT. CONTRACTOR TO PROVIDE INSULATED SHEETMETAL PLENUM BEHIND ALL LOUVERS. COLOR SHALL BE SELECTED BY ARCHITECT, ASSUME "STONE VENEER" TO MATCH EXTERIOR WALL SURFACE. PROVIDE MOTORIZED DAMPER WIRE TO OPEN WHEN ERV-1 IS IN OPERATION.
17. MINOR DEMOLITION AND REPLACEMENT THIS SPACE. DEMOLISH AND REPLACE CORRIDOR AIR DEVICES, FAN COIL, SENSOR, AND DUCTWORK WHERE REQUIRED FOR CORRIDOR RENOVATION.
18. PROVIDE MANUFACTURER-SUPPLIED CONDENSING UNIT TWINNING KIT. INSTALL TWIN-CONDENSING UNITS PER MANUFACTURER INSTRUCTIONS. MAINTAIN MINIMUM 3' SERVICE CLEARANCE FOR ALL PARTS REQURING ROUTINE AND PREVENTATIVE MAINTENANCE.



ROOF PLAN - NEW WORK

SCALE: 1/8" = 1 FOOT

NORTH



DETAIL NOTES

1. 12" X 14" EXHAUST DUCTWORK
2. MOTOR OPERATED DAMPER, INTERLOCKED WITH ERV-1.
3. OUTDOOR AIR LOUVER, L-1. MOUNT ON HIGH ROOF SIDEWALL, MATCH COLOR WITH EXTERIOR WALL SURFACE FINISH.
4. 12" X 14" OUTDOOR AIR INTAKE DUCTWORK
5. INTAKE HOOD IH-1.
6. 12" HIGH ROOF CURB – FLASH AND SEAL PER MANUFACTURER'S INSTRUCTIONS.
7. PROVIDE TURNING VANES WHERE APPROPRIATE.
8. FINISHED MECHANICAL ROOM FLOOR LEVEL.

SECTION "A" - NO SCALE

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Revisions	Date
ISSUED FOR BIDDING	01–31–2013

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STATE OF OHIO · PARMA NAND SINHA · 42622 · REGISTERED PROFESSIONAL ENGINEER

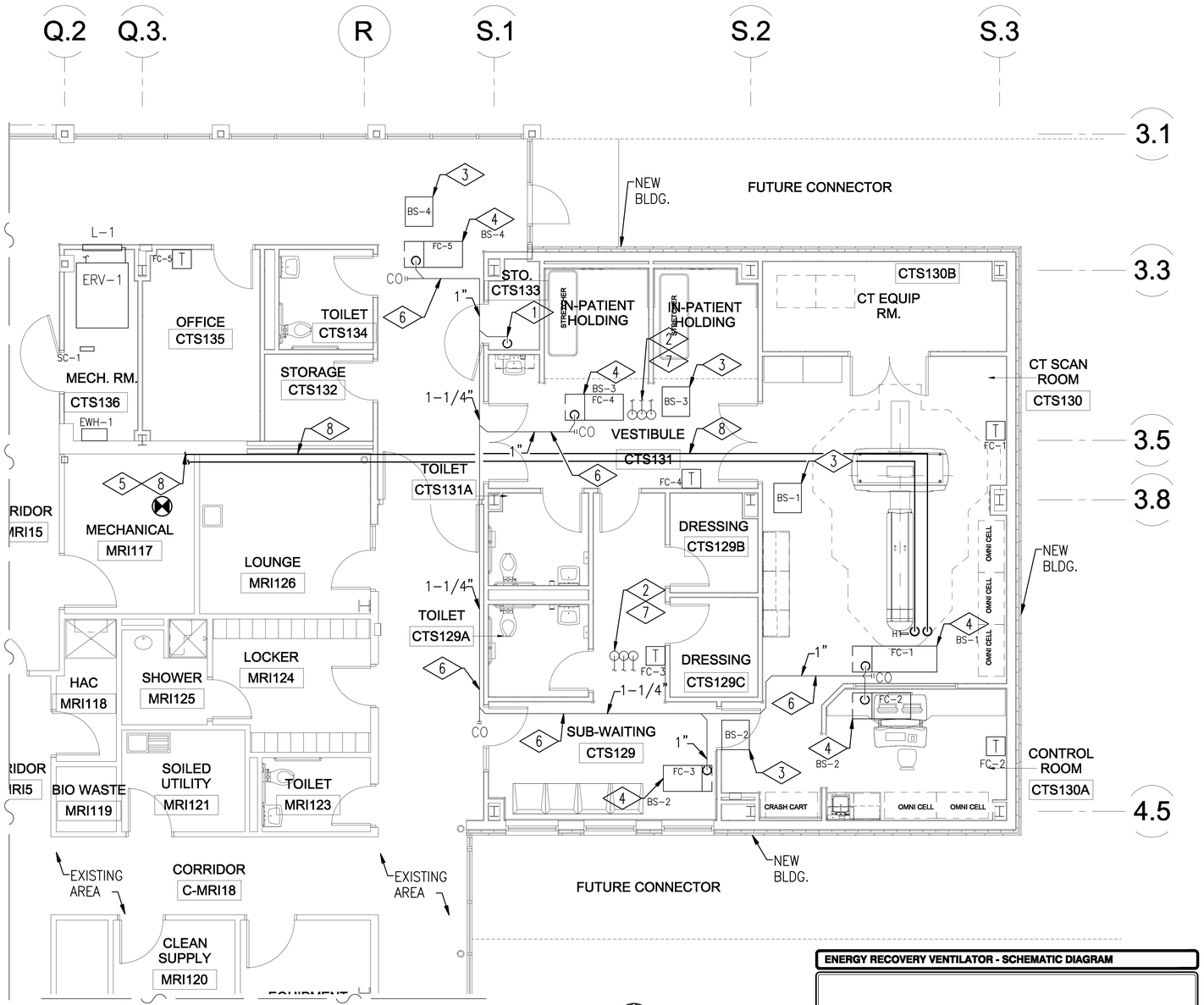
Revised By:

Drawing Title	MECHANICAL HVAC NEW WORK PLANS
Project Title	SITE PREP FOR CT SCANNER
Date	01–31–2013
Project No.	552–CSI–333
Approved: Project Manager	RANDI FIORINA
Building Number	335
Checked	PNS
Drawn	CONTECH
Drawing No.	MH 2.0
Approved: Service Chief	GARY ABREU
Location	4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

Department of Veterans Affairs

VA FORM 08–6231, OCT 1978

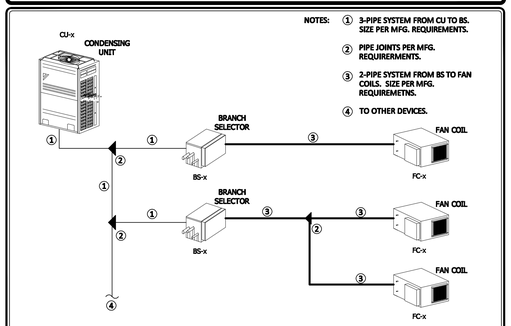


FIRST FLOOR HVAC PIPING PLAN - NEW WORK

SCALE: 1/4" = 1 FOOT

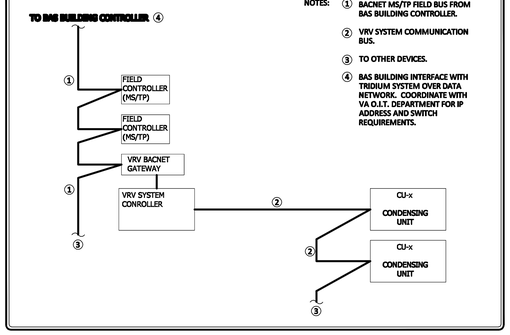
NORTH

REFRIGERANT PIPING SCHEMATIC - CU-X (TYP)



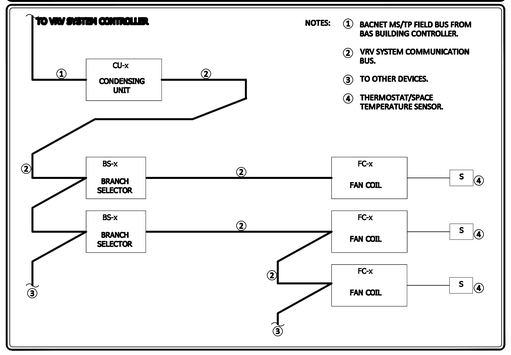
NOTES:
1. 3-PIPE SYSTEM FROM CU TO BS. SIZE PER MFG. REQUIREMENTS.
2. PIPE JOINTS PER MFG. REQUIREMENTS.
3. 2-PIPE SYSTEM FROM BS TO FAN COILS. SIZE PER MFG. REQUIREMETNS.
4. TO OTHER DEVICES.

CENTRALIZED CONTROL WIRING SCHEMATIC



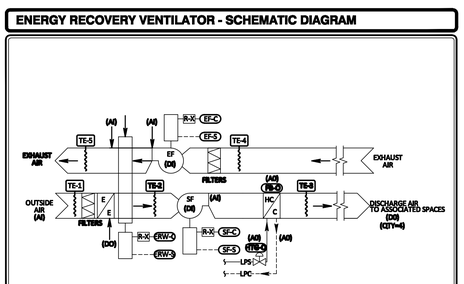
NOTES:
1. BACNET MS/TP FIELD BUS FROM BAS BUILDING CONTROLLER.
2. VRV SYSTEM COMMUNICATION BUS.
3. TO OTHER DEVICES.
4. BAS BUILDING INTERFACE WITH TRIDIUM SYSTEM OVER DATA NETWORK. COORDINATE WITH VA O.I.T. DEPARTMENT FOR IP ADDRESS AND SWITCH REQUIREMENTS.

WIRING SCHEMATIC - CU-X (TYP)



NOTES:
1. BACNET MS/TP FIELD BUS FROM BAS BUILDING CONTROLLER.
2. VRV SYSTEM COMMUNICATION BUS.
3. TO OTHER DEVICES.
4. THERMOSTAT/SPACE TEMPERATURE SENSOR.

ENERGY RECOVERY VENTILATOR - SCHEMATIC DIAGRAM



DRAWING NOTES – MECHANICAL

1. RUN AC CONDENSATE DRAIN PIPING DOWN WALL AND TERMINATE INTO SANITARY DRAIN.
2. VARIABLE REFRIGERANT VOLUME (VRV) MANUFACTURER SHALL PROVIDE REFRIGERANT PIPING LAYOUT AND PIPE SIZING BASED ON CONTRACTORS COORDINATION DRAWINGS WITH FINAL LOCATIONS. PROVIDE REQUIRED CAPACITIES.
3. PROVIDE THREE (3) PIPE (LIQUID, HOT GAS, AND SUCTION) REFRIGERANT LINES FROM BRANCH SELECTOR BOXES (BS-#) TO CONDENSING UNIT PER MANUFACTURER'S ROUTING AND SIZING.
4. PROVIDE TWO (2) PIPE REFRIGERANT LINES FROM BS-BOXES TO EVAPORATOR / FAN COIL UNIT / TERMINAL UNIT PER MANUFACTURER'S ROUTING AND SIZING.
5. NEW STEAM AND CONDENSATE TAP INTO EXISTING LINES PROVIDED FOR MRI-BUILDING 335. PROVIDE FIRE SEALANT ON ANY PENETRATIONS TO ROOM MRI-117.
6. SLOPE ALL AC CONDENSATE DRAIN PIPING DOWN TOWARDS DRAIN AT 1/8" PER FOOT.
7. REFRIGERANT PIPING UP TO ROOFTOP CONDENSING UNIT(S).
8. RUN ¾" STEAM AND ¾" LPC TO DUCT-MOUNTED STEAM HUMIDIFIER COIL FOR CT SCAN SUITE.

VARIABLE REFRIGERANT VOLUME -SYSTEM

SEQUENCE OF OPERATIONS

THE VARIABLE REFRIGERANT VOLUME (VRV) SYSTEM SHALL CONSIST OF AN OUTDOOR CONDENSING UNIT WITH VARIABLE SPEED COMPRESSOR(S) AND MULTIPLE INDOOR FAN COILS. VRV CONTROL SYSTEM SHALL BE BY THE SAME MANUFACTURER AS VRV SYSTEM. THE SYSTEM SHALL BE CONTROLLED ON AN OCCUPIED/UNOCCUPIED TIME SCHEDULE AS DEFINED AT THE OPERATOR WORKSTATION. THE VRV SYSTEM SHALL HAVE CENTRALIZED CONTROLLERS. THE BUILDING AUTOMATION SYSTEM SHALL INTERFACE TO THE VRV SYSTEM CONTROLLER TO ADJUST SETPOINTS, OCCUPY ZONES, AND MONITOR THE SYSTEM.

THE VRV CONDENSING UNIT SHALL MODULATE TO MATCH THE LOAD OF THE CONNECTED INDOOR UNITS.

OCCUPIED MODE:
THE INDIVIDUAL FAN COILS SHALL CYCLE THE FAN UPON A CALL FOR COOLING OR HEATING. THE FAN COIL SHALL OPERATE AT REDUCED LOAD AND VARY THE REFRIGERANT FLOW TO FULL COOLING OR HEATING UNTIL THE SPACE IS AT THE OCCUPIED COOLING OR HEATING SETPOINT. FAN COIL UNIT CONTROLLER SHALL COMMUNICATE WITH THE BRANCH SELECTOR BOX TO CONTROL THE MODE OF OPERATION (HEATING OR COOLING).

UNOCCUPIED MODE:
THE FAN AND DX COOLING COIL SHALL BE CYCLED TO MAINTAIN AN INCREASED UNOCCUPIED SPACE TEMPERATURE SETPOINT.

IN, HEATING MODE, THE FAN AND DX COIL SHALL BE CYCLED TO MAINTAIN DECREASED UNOCCUPIED SPACE TEMPERATURE SETPOINT.

THE UNIT SHALL BE CONTROLLED ON ITS OWN OCCUPIED/UNOCCUPIED TIME SCHEDULE AS DEFINED AT THE OPERATOR WORKSTATION.

ROOM HUMIDITY CONTROL (CT SCAN SUITE ONLY):
AIR FLOW PROVING SWITCH SHALL PROVE AIR FLOW BEFORE STEAM CONTROL VALVE IS ALLOWED TO OPEN.

THE HUMIDIFIER STEAM CONTROL VALVE SHALL BE MODULATED TO MAINTAIN A SPACE HUMIDITY SETPOINT OF 50% R.H.

A DUCT HIGH LIMIT HUMIDISTAT SHALL PREVENT THE HUMIDIFIER DISCHARGE AIR FROM RISING ABOVE 80% RH. AS THE DISCHARGE AIR HUMIDITY APPROACHES THE HIGH LIMIT, THE HUMIDIFIER CONTROL VALVE SHALL BE MODULATED TOWARD THE FULLY CLOSED POSITION.

SYSTEM POINTS:

TYPE	DESCRIPTION	QUANTITY
AI	SPACE TEMPRATURE	1 (PER FAN COIL)
AO	SPACE OCCUPIED SETPOINT	1 (PER FAN COIL)
AO	SPACE UNOCCUPIED SETPOINT	1 (PER FAN COIL)
DO	OCCUPIED COMMAND	1 (PER FAN COIL)
AO	VRV CONDENSING UNIT COMMAND	1 (PER COND. UNIT)
AI	VRV SYSTEM LOAD %	1 (PER COND. UNIT)
DI	VRV CONDENSING UNIT STATUS	1 (PER COND. UNIT)
DI	FAN COIL FAULT	1 (PER FAN COIL)
DI	VRV CONDENSING UNIT FAULT	1 (PER COND. UNIT)
AI	SPACE HUMIDITY	1 (CT UNIT ONLY)
AO	HUMIDIFIER VALVE COMMAND	1 (CT UNIT ONLY)

ERV-1 OPERATION

SEQUENCE OF OPERATIONS: ENERGY RECOVERY VENTILATOR (ERV)

MODE CONTROL -
THE ERV SHALL OPERATE WHEN THE BUILDING IS OCCUPIED OR ANY OF THE FAN COILS ARE IN THE OCCUPIED MODE. THE SUPPLY FAN, EXHAUST FAN, AND ENERGY RECOVERY WHEEL SHALL OPERATE WHEN ERV IS IN OPERATION.

DEFROST CONTROL -
THE DEFROST HEATER SHALL OPERATE WHEN SENSOR DETERMINES THAT THE ENERGY RECOVERY WHEEL IS FROSTING.

DISCHARGE AIR CONTROL -
THE STEAM HEATING VALVE AND FACE & BYPASS DAMPER SHALL BE MODULATED IN SEQUENCE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT A NEAUTRAL AIR TEMPERATURE. THE STEAM VALVE SHALL BE FULLY OPEN BEFORE THE FACE AND BYPASS DAMPER BEGINS TO OPEN TO THE COIL.

SYSTEM POINTS:

TYPE	DESCRIPTION	QUANTITY
AI	OUTSIDE/ERV ENTERING AIR TEMPERATURE	1
AI	ERV DISCHARGE AIR TEMPRATURE	1
AI	ERV EXHAUST AIR ENTERING TEMPERATURE	1
AI	ERV EXHAUST AIR LEAVING TEMPERATURE	1
AI	DISCHARGE AIR TEMPERATURE	1
AO	DISCHARGE AIR SETPOINT	1
AO	STEAM HEATING VALVE COMMAND	1
AO	FACE & BYPASS DAMPER COMMAND	1
DO	OCCUPIED COMMAND	1
DO	SUPPLY FAN COMMAND	1
DO	EXHAUST FAN COMMAND	1
DO	ENERGY RECOVERY WHEEL COMMAND	1
DI	SUPPLY FAN STATUS	1
DI	EXHAUST FAN STATUS	1
DI	ENERGY RECOVERY WHEEL STATUS	1
DO	MOTOR-OPERATED DAMPER	2

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Revisions	Date

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STATE OF OHIO · PARMA NAND SINHA · 42622 · REGISTERED · PROFESSIONAL ENGINEER

Revised By:

Drawing Title	MECHANICAL PIPING NEW WORK FLOOR PLANS
Project Title	SITE PREP FOR CT SCANNER
Date	01-31-2013
Project No.	552-CSI-333
Approved: Project Manager	RANDI FIORINA
Building Number	335
Checked	PNS
Drawn	CONTECH
Drawing No.	MH 2.1
Approved: Service Chief	GARY ABREU
Location	4100 WEST THIRD STREET DAYTON, OH 45428

VAMC, DAYTON

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978